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## EDITORIAL NOTES

### EXPOSITION-YEAR VACATION AND THE A. M. A.

If you have not already done so, begin now to plan your vacation. Everyone who works hard, particularly along the line of brain work with its attached responsibilities, should take a complete rest from such occupation for at least a few weeks at some time during the year. You owe that rest to yourself and your patients. This year you can so arrange your vacation as to make it not only a rest, but a wonderful and instructive outing as well; plan your trip so as to spend some part of the time in San Francisco during the third week in June. The scientific work in the sections of the A. M. A. will be very good; the exhibits in connection with public health activities will be very fine and very illuminating. And then there is the wonderful Exposition, with thousands of things you will want to see and to know about. You can hardly afford not to see the Exposition and you might as well come at a time when you will get the most out of your trip—the week beginning June 21st, 1915. Do not forget it and begin to plan now to be here at that time.

### DEFENSE BY INSURANCE COMPANIES.

Recently some new points in regard to the defense of suits for damages for alleged malpractice and the attitude of insurance companies thereto, have been brought to our attention. One physician was of the opinion that he held a policy in which the company agreed to pay any judgment against him but not to undertake the actual defense of his case in the event that he was sued. This doctor had not read his policy and had got that impression from some other physician who

had insurance and who also, in all probability, had not read *his* policy. As a matter of fact, no insurance company issues such a policy, so far as known, though doubtless Lloyds or some other concern might write a special policy of that kind if asked to do so. There is a standard form of policy covering this form of liability, which has been carefully worked out by lawyers and which is, practically, the same with all companies. Some of the companies have a few more technicalities to enable them to get out of defending a few more suits, but that is all. If you are insured in a casualty company, *read your policy carefully*; probably not one physician in a thousand, having insurance, has ever read his policy through enough times to know its provisions. They all contain one provision which is that the insured physician must notify the company as soon as he learns of a threatened suit and send them the papers as soon as he is served with them in any such suit. And by the way, an insurance policy is nothing more than a contract entered into between two contracting parties; the company and the physician. The company agrees to do certain things, *provided* (and that is vitally essential) the physician does certain things, only one of which is paying the premium. If the insured does not live up to his part of the contract, that releases the company from its portion of the contract and the physician might as well have no insurance. He has simply thrown his good money away. That is why the Council instructed the Secretary to be very explicit in warning a member who is threatened or sued to notify the insurance company immediately, in case such member carries insurance. This does not, however, cancel the interest which the State Society takes in his case. If the company tries to or succeeds in getting out of its responsibility by some technicality, the State Society stands behind the member and will protect him. If the lawyer employed by the company does not properly handle the case, our legal department steps in and undertakes to do it properly. But the Council, and the House of Delegates, have felt that it was wrong to all the other members of the Society not to make the insurance companies shoulder the expense which they had contracted in issuing the policy to a member who might subsequently be sued.

### LEGAL ABSURDITY.

A curious case has come up in the southland. A member who holds insurance in an indemnity company has been sued, not for alleged malpractice, but for breach of contract, and the insurance company states that it does not insure against breach of contract but only against claims of malpractice, carelessness or errors of judgment. The facts in the case are more or less these: A woman was operated upon more than a year ago, for a tumor of the breast; the surgeon removed the breast, at the time of the operation. She now complains that at the time she consulted him, he agreed and contracted with her to operate upon her breast and remove the tumor but *not to remove the breast*. The complaint does not allege carelessness, neglect

or error of judgment but merely that he broke his contract with her in that he did remove the breast. It is only fair to state that the insurance company has offered to defend the action if the physician will sign a statement acknowledging that he has no claim upon them under the policy because the action is based upon a something not specified in or covered by the policy. It is not believable that a surgeon of the prominence of the member in question would make any such contract or undertaking. Every surgeon knows that when he starts a breast operation for tumor, not only the breast but a good deal more may need taking away, and the extent of his operation he cannot foresee when he makes his incision. In all probability this case will fall to the ground, but it serves well to bring up a new point—be very careful in your statements to the patient before an operation and never undertake or contract to do a certain limited and specified thing. Furthermore, it would be very wise, in all serious operative conditions, to have the whole statement of the case and what is to be done by the surgeon regardless of limitation, specified in writing. It is true that the right of the patient to sue cannot be released by the patient in writing before an operation, but when such a statement is in evidence, it helps very much to prevent or to win a suit should such a contingency arise at some time in the future. The fact that the tendency to "sue the doctor" has so enormously increased in the last few years, should make us all very careful to leave nothing undone in the way of protection against possible future trouble. We are protecting ourselves and each other, for carelessness leading to a judgment against a physician invariably stirs up other people to sue other physicians.

#### INVESTIGATE ALL APPLICANTS.

Again must we urge all county society secretaries to send in the names of applicants to the office of the State Society for investigation and report. Membership in county units is becoming more and more valuable and important; as the medical law is broken down, from legislature to legislature, membership in a recognized medical organization of high standing will become more necessary and more valuable. Some county units are doing this now, but all are not and since the first of the year at least two societies have elected to membership physicians who, from their records in our office, would be seen at a glance to be undesirable material. Keeping track of and filing data about physicians is a very large part of the office work of the State Society and it has been done for years in order to have the information for the benefit of county units. Please remember.

#### "THE MEDICAL TRUST"

It has been whispered in the JOURNAL office, in a very emphatic whisper, that the osteopaths, and the numerous horde of drugless freaks that have been infesting Sacramento in the attempt to change the present law so as to allow almost anyone to practice medicine at his pleasure, are in a sad, sad state of mind. "The medical trust" was not at all in evidence and there was no bogey man to

howl at with rumpled hair and wildly flinging arms! It was almost unbelievable! There was no committee or official representative of the State Society—the "medical trust"—in Sacramento; there was no deep-dyed villain hanging around to secure the passage of bills that would make it difficult for the osteopath to become, in a moment, a physician and surgeon or the drugless pretender to rob and kill the sick. Not at all. There was no one to fight and to throw mud at, and they were sorely peeved. Efforts were made in several different ways to get the Society excitedly interested and so furnish the opening for howling about the "medical trust" and its pernicious activity. But nothing of that kind was doing. The President of the Board of Medical Examiners sent a carefully prepared letter setting forth the true purpose and object of a good medical law and high medical standards, to every member of the legislature; if one of them wanted actual information, it was at hand. This letter was very similar to the letter sent to Governor Johnson by the Council of the State Society—and ignored by him—two years ago. That was all. The legislators had been told what was right and it was then up to them. We were not pleading for anything and so making it possible to be slandered. The President of the board, Dr. Harry E. Alderson, also appeared before committees several times when there were hearings on the various medical bills before the legislature; but in his official capacity and to give accurate information, if desired. And even this small and dignified appearance of regular medicine was received badly and the attempt made to discredit it. An osteopath on the board, Vanderburgh, made an affidavit to the effect that last summer Dr. Alderson attempted to make a deal with him, the gist of which was that if he would vote to refuse recognition to three medical schools in San Francisco, Alderson would vote to recognize the osteopathic diploma mill in Los Angeles, and that he Vanderburgh, indignantly rejected any such dishonest bargain! Dr. Alderson filed an affidavit to the effect that the whole thing was untrue. At a committee hearing to investigate the incident, one argument was sufficient to settle the whole matter. In January 1915 Dr. Alderson was *unanimously* elected President. "Dr." Vanderburgh, then a member of the board, alleged that the dishonest bargain referred to in his affidavit was suggested to him by Alderson last year. He was asked the question, why, if he knew of this dishonest suggestion of Dr. Alderson, did he, in January, vote for him to become President of the board? There was no answer. Either Vanderburgh's memory or his ingenuity had deceived him and led him into a dirty mess. Possibly Mr. Roosevelt might apply a "shorter and uglier word." It is not possible, as yet, and without careful study, to say just what injury has been done to the law protecting the people from being preyed upon by ignorant charlatans and drugless quacks, but doubtless when the smoke has cleared away and the result is carefully studied, it will be found that the protective fence safeguarding the people in this matter, has been badly damaged.

### IMPORTANCE OF CASE RECORDS.

This brings up the whole matter of case records and their vital importance. Too many physicians are very, very careless in the matter of keeping case records of their patients. Memory is a jade and an utterly unreliable one. Not one person in many thousands can accurately recall, from memory alone, any considerable number of the details of some most important incident that happened a year or so ago, and several people testifying to facts relating to such incidents will contradict each other most flatly, even when all have been equally mixed up in it or have been witnesses of or participants in the occurrence. On the other hand, case after case could be mentioned where the keeping of careful records that could be produced in court, where every essential detail relating to an illness or an operation was a matter of permanent record and not a matter dependent upon the faulty memory of the physician, has either discouraged the bringing of the suit or has made it a trifling matter to win it in court. At operations, such things should be noted as what assistants and nurses were present, what they variously did and if other physicians were witnesses to the operation. Whenever possible, every surgical procedure should be a matter of consultation and a record should be kept of that fact. You can never tell when the most unlikely appearing patient may turn around and sue you. One case is on record where the patient visited her physician at ten o'clock in the morning, thanked him profusely for his attention and paid his bill, and then deliberately walked down-town and filed a suit against him before noon of the same day! The importance of making and keeping an X-ray plate in all fracture cases has been frequently referred to in the JOURNAL and has been recognized by a rule of the Council endorsed by the House of Delegates. But that is only a fragment, though a most important one, of the record in the case. An excellent suggestion has been made in this connection, and it is well worth keeping in mind. When you make your X-ray plate, put two plates in the wrapper, film sides together, and then, if the patient demands the plate, as some of them do, and is quite peeved if you insist upon keeping it, you can give him one and still keep the other for your protection. Some men are doing this now, but it is a convenient thing for all to do and the expense is trifling. By all means think of your records; keep them sufficiently full; do not be careless and slovenly about this and so run the chance of being put to a good deal of trouble and expense—for if you are sued it will take a good deal of your time, and that is an expense to you—to say nothing about placing an added burden on all the members of the society just through your own fault. Keep your case records carefully.

### "THE PASSING OF THE DETAIL MAN."

Several most pleasant gentlemen and worthy citizens have expressed a marked degree of pain because the JOURNAL published a little article with the above caption a month or two ago. A detail man is the representative of a manufacturing house and he goes about the country telling all the physicians he can come in contact with, what "the house" instructs him to say. Sometimes, when the house is a good one, he is able to tell the truth; many times he is not, and it must be somewhat unpleasant to him, for he must know it as well as anyone else. The evidence is not in the JOURNAL office now, but it was before the fire, to support the statement that not a single pharmaceutical manufacturing house in the United States welcomed the establishment of the Council on Pharmacy and Chemistry, because not a single one of them was free from the pernicious practice of foisting upon physicians preparations or mixtures or specialties that were not as claimed. And many of them are doing it yet. The Council asks of the manufacturer only the truth; many of them don't like the truth at all. Their big money comes, or used to come, from making the physician believe that what they said about their things was true, and this they did largely by means of the detail man, whereas and as a matter of fact, what they said about their stuff was mostly untrue. It has doubtless happened to many a physician, as it did to one a few years ago, that on a single day four detail men from four different houses called upon him and left four samples of what was supposedly the same thing, though each representative claimed that his house was the only one making the best preparation. How could they all be telling the truth? On the other hand, as an expression of a different opinion, here is a letter from the Co-operative Medical Advertising Bureau, an institution organized by the A. M. A., for the purpose of getting decent advertising in an honest way for the various state medical journals:

"We want to congratulate you on your sermonette entitled 'The Passing of the Detail Man'!

"This article ought to have the effect of making doctors consult the advertising pages of the California Journal to find out if the articles they want are advertised. We believe if the doctors in a state will, once for all, adopt the policy of asking about any articles they want to buy, 'Has it been approved? If so, why is it not advertised?' that the question of making advertising in the State Medical Journals pay will be solved.

"How far do you think the doctor can be advised to go when he is approached by the detail man? Should he be urged to say: 'I do not find your product advertised in my State Journal. If it has been approved and is in good standing with medical authorities, why is it not advertised in my State Journal?'

"Is it advisable and practicable for you to write another sermonette on the above subject for an early issue of your Journal? If you do, the Bureau wants to reprint them and use



both of these articles whenever it is soliciting business from any pharmaceutical house.

"As soon as the doctor will depend on his State Journal for information about the things he wants to buy, then it will not be possible to print the advertisements that will come to your publication. That is just the difficulty the A. M. A. Journal is having at this time. Furthermore, the advertisements bring the advertiser better returns."

#### THE HARRISON LAW; CONSCIENCE OR CUPIDITY?

A number of letters have come to the JOURNAL asking for information in regard to various points connected with the administration of the Harrison anti-narcotic law and the rights of physicians thereunder. Many physicians have, and practically every physician at some time or other has had under his care, a drug habitue. Many of these, for one reason or another, do not appear to be good subjects for an attempted cure or for the immediate withdrawal of the drug. That is a matter that is up to the conscience of the physician. The law permits him to prescribe these drugs, but he must put the name and address of the patient on the prescription and also his own name in full and the number of his Federal license. He may personally give a dose to a patient except in his office, without keeping any record. If, however, he gives any prescribed drug to a patient in his office or to be used when he is not present or to be given to the patient by some one else or to be taken subsequently by the patient, then he must keep a record of the name of the patient, the date, the drug and its amount, and this record he must keep for two years. The purpose of the law is not to interfere in any way with the honest practice of the professions affected by it, but to put a stop to the criminal trade in these habit-forming drugs. Cupidity, not conscience, should know fear.

#### MEDICAL COMMENT ON WAR VICTIMS.

A distinguished English physician, writing to a friend here in California, conveys some interesting facts in regard to conditions related to wounded soldiers. Of course there is much of the letter which is not exactly neutral in tone (!) and therefore is omitted. At the request of the recipient of the letter, all names of men and places are left out:

I have seen a good deal of the wounded soldiers—we have had 900 in the — Hospital where I am vice-chairman and to be chairman in March, and I am inspector of Red Cross Auxiliary Hospitals over the whole of —, which keeps me motoring all about the country. A very large number of beds—about 700—have been equipped by private persons, mostly only 8 or 12 in one place, so it is a big job. We get relief by drafting out from the — Hospital our slight and semi-convallescent patients so as to have our beds free for the more serious cases. We have erected

marquees and a long wooden building in the hospital grounds which give us about 140 extra beds, and we also use three wards for soldiers. They almost all arrive septic, but the sepsis as a rule is not of a bad type. Though there are some cases of tetanus and of gangrene, I have never seen wounds so foul producing so little constitutional disturbance. But the sepsis is very capable of causing secondary hemorrhage. Never was a war conducted with such brutality since the early middle ages. The Belgians, of whom I have seen a few, seem very nice fellows, very courteous and very patient. We offered to take some Belgian refugees into our house, but being near the coast this is a prohibited area for aliens so we have not had any.

#### NEW AND NON-OFFICIAL REMEDIES, 1915.

The 1915 edition of this exceedingly valuable book issued by the Council on Pharmacy and Chemistry of the A. M. A., 535 North Dearborn street, Chicago, has been issued and is much enlarged and by so much, more useful. It may be fairly said to contain descriptions of all the worthwhile proprietary and nonofficial remedies now on the market in the United States and it is the only book which contains comprehensive and trustworthy discussions of the composition, source, properties and dosages of proprietary remedies. Paper bound copies cost 50 cents and cloth bound \$1.00, and they may be had from the A. M. A. at the address already given. In addition to the individual descriptions of drugs and preparations, the book contains critical discussions of the various classes of preparations. These general discussions compare the value of the newer remedies with the established drugs which they are designed to displace. Thus the book affords an authoritative review of therapeutic progress.

The book contains, as a supplement, a list of references to discussions of articles not admitted to New and Nonofficial Remedies which have appeared in *The Journal of the American Medical Association*, in the Annual Reports of the Council on Pharmacy and Chemistry and in the Reports of the A. M. A. Chemical Laboratory. This list of references enables physicians readily to obtain information in regard to the many nostrums which are exploited to the medical profession.

#### SUMMER GRADUATE MEDICAL COURSE.

The second of the summer graduate medical courses inaugurated by Stanford University Medical School has been outlined for the present year. The session will extend for six weeks from July 6th to August 14th and all the classes will be in San Francisco. The courses are quite comprehensive in their scope and as some of them are limited in the number of students that will be accepted, those who are considering the matter should correspond early with the Dean, Stanford University Medical School, Sacramento and Webster streets, San Francisco, Calif.



## LUETIN REACTION IN SYPHILIS.

Owing to the fact that luetin is now being made by large producers of biological products whose enterprising agents are selling the same to all who can be induced to buy, it is felt that there is no little danger that the preparation will be improperly used by some and perhaps false conclusions drawn from the results. Already there are by far too many individuals carrying diagnoses of syphilis based on insufficient evidence, and by far too many uncured syphilitics who have been declared cured merely upon the basis of one negative Wassermann or Noguchi reaction. It is hardly necessary to state that wrongly interpreted luetin reactions also can lead to family tragedies and untold complications. It is felt that a few definitely known facts concerning this subject should again be brought to the attention of the profession.

Luetin consists of an emulsion of several pure strains of the spirochaeta pallida killed by heat and containing as a preservative  $\frac{1}{2}\%$  tricesol. This is diluted before use with an equal amount of normal salt solution. The preparation now on the market is supposed to be ready for use without further dilution. Luetin should be kept on ice and the greatest care exercised to prevent contamination. Just before using, the preparation should be very thoroughly shaken and should be injected before the solid elements begin to settle in the fluid. The needle should be of the very smallest caliber with a short bevel, for it is necessary that it be introduced intradermically. For the test 0.07 c. c. of the luetin is very carefully injected intradermically after first sterilizing the skin with alcohol. Usually the skin over the left lower biceps is chosen for this purpose. If proper attention is not paid to the technic, secondary infection and spurious reactions may occur.

From experience at the Stanford University Medical School, where luetin kindly supplied by Noguchi has been used since 1912 in a large number of cases, it is felt that a reaction to be declared positive should have the following characteristics:

Within 48 hours an *indurated*, inflamed, deeply seated *nodule* usually develops varying in size from that of a pea to that of a hazel nut or even larger. The induration and redness persist for a week or more. Those cases in which the induration and inflammation subside completely within a week and never return are discarded. Occasionally, however, there are cases (late or latent lues) where the papule subsides rapidly to reappear a week or more later (the "delayed reaction"). Such reactions are prone to become very marked or even "hemorrhagic."

The essential features are persistent induration and inflammation. Formerly when the control injections were made, often there developed at the site of the control what appeared to be a positive reaction, but this always subsided within a few days and never returned. An indurated reaction that persists a week is considered to be positive. The reactions vary in size and severity from that of a pea-sized bright red nodule to that of a marble-sized violently inflamed tumor with an extensive surrounding red areola. Usually on the sum-

mit of the lesion there is a pustule-like point, but it has been found that the pus is sterile. The nodule undergoes involution slowly and leaves pigmentation and often slight thickening to mark the spot. Some that have been observed at Stanford after two years still show small scar-like elevations at the point of injection.

Noguchi recently made the following observations based on the work of fifty investigators (N. Y. Med. Journal, Aug. 22, 1914):

"The luetin reaction in early syphilis occurs in less than one-third of the cases, and is usually mild."

"In less than one-half of the cases of secondary syphilis it is positive and the reaction is usually mild."

"In late syphilis the reaction appears in about 80% of the cases."

"In congenital syphilis the reaction is reported to occur in over 70%."

"In the so-called parasymphilitic cases there are no constant findings."

Various observers report a high percentage of positive results in latent lues.

The reaction does not always run parallel with the Wassermann, although frequently they are both positive. Treated cases often show negative Wassermann and positive luetin reactions.

Reading the foregoing statistics by Noguchi, another way, it will be seen that:

In *early syphilis*, two-thirds of the cases show *negative* luetin reactions.

In *secondary syphilis* one-half of the cases show *negative* results.

In *late syphilis* twenty per cent. of the cases fail to react to the luetin.

In *congenital syphilis* thirty per cent. fail to show the reaction.

The luetin reaction in early and secondary syphilis is mild and it should be remembered that it requires considerable experience to be able to recognize these mild reactions.

There is no doubt that the luetin test may be of very great assistance in making a diagnosis, but before attempting to perform the same one should read up on the subject. The "detail men" who are visiting "doctors" (M. D.'s as well as the numerous other varieties) and enthusiastically praising this new method are apt to mislead some so that mistakes will be made. For those who are sufficiently interested, the following list of references is offered:

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HARRY E. ALDERSON.

## ORIGINAL ARTICLES

### DIAGNOSIS OF GASTROINTESTINAL DISEASE.\*

Illustrated by Forty Operative Cases—April-October, 1914.

By CARO W. LIPPMAN, M. D., Visiting Roentzenologist to the City and County Hospital, 135 Stockton St., San Francisco.

Before I begin my discussion I wish to state that these are forty consecutive operatively confirmed diagnoses out of the 170 gastrointestinal cases which I have seen in the last six months. I purposely confine myself to these few cases which I have seen in this city as I wish to show that we can diagnose as well here as in Rochester or Europe. I present operatively confirmed diagnoses because I hope that after hearing about these cases you will believe that the same percentage of correctness holds good in my non-operative cases. My paper will not attempt to discuss all my cases because I would have to cover a greater part of the field of gastroenterology. I will merely discuss a few interesting points in this report of forty cases.

Schmieden in the Grenzgebieten last March\* made correct diagnoses in about 85% of his cases. This he did within a reasonable time after the patient had entered the hospital. He did not dawdle until the patient was moribund and beyond surgical aid. Turning a patient over to the surgeon at this late stage is a vicious and horrible practice. I speak of this particularly because of the large percentage of poor operative results reported by some of my fellow internists in this and other cities.

In discussing Schmieden's paper at the time I maintained that we could arrive at practically the same percentage of correctness in non-acute gastrointestinal disease if we did three things thoroughly: firstly, make a good history; secondly, make a thorough fluoroscopic examination; thirdly, examine the stool for occult blood or with the Schmidt test diet as the case requires. I rate these in the order of their importance. All other examinations are of lesser importance and contribute other than confirmatory evidence only in exceptional cases. Of course, I am talking of diseases which lie beyond the reach of the proctoscope. There is no single gastrointestinal case in my operative series which could have been better diagnosed if other methods of diagnosis had been employed.

About history taking we all know, the value of

the Schmidt test diet I hope to take up in a later paper. To-night I shall discuss chiefly the screen examination as three-fourths of these cases were not mine for general diagnosis but were sent to me for screen examination. I also wish to emphasize the fact that it is a fluoroscopic, a screen examination, which helps. To take plates for the diagnosis of stomach conditions is like trying to diagnose lameness from a photograph. If the man has a half leg missing you may be quite sure he is lame, but if he only limps slightly you need to see him walk or see him on the movies to make sure that he is lame. Now the screen is our moving picture and we need to recognize defects in the movement of the stomach and intestines in order to make our diagnoses correctly. I can illustrate this best with the diagnosis of duodenal ulcer of the lower part of the organ, that is to say lower down than the entrance of the common duct. Six times cases have come to me with the clinical diagnosis of carcinoma, or pylorostenosis resulting from ulcer, with the classical syndrome of vomiting, loss of weight, pain after eating, etc. None of these six cases showed radiological signs of pylorostenosis nor of carcinoma but they did show the so-called reverse peristalsis of the duodenum, a moving back of the duodenal contents toward the stomach after forward progression had taken place. This may occur but once or constantly, according as the stenosis be mildly spastic or definitely organic. Once it is seen we know that there is some irritation at the lower end of the duodenum causing a spasm and this is an ulcer in ninety per cent. of the cases which I have seen. In the more severe cases a definite organic stenosis is produced which may be due to ulcer and its consequences or to a congenital band in the neighborhood of the ligament of Treitz. Two of my operated cases (Nos. 19 and 30) showed the syndrome of duodenal stenosis (Holzknecht):

(1) Filling of the duodenum above the seat of stenosis so that the wall of the duodenum is sharply outlined.

(2) Ineffectual or partly effectual peristalsis of the filled duodenum causing a change in the form of the organ but no change in the position of the contents. This is the so-called antiperistalsis.

(3) Retention above the stenosis.

(4) Occurrence of paralytic dilatation above the stenosis.

Only severe cases show the whole group of symptoms. The great majority show only the filling of the duodenum and the so-called antiperistalsis. The first of my two operative cases (No. 19) showed the filling and reversed motion of contents only during the first examination and at no subsequent examination. The second case (No. 30) showed only four or five waves of reversed motion and that after being induced by a special technic of my own. Incidentally I wish to mention that both of these cases showed old healed gastric ulcers. For this technic see Fortschr. a. d. Geb. d. Röntgen S. trahlen, April, 1914. It also appeared in Surg., Gynec. and Obst. (Dec., 1914). See also München. med. Wchnschr., Sept. 29, 1914, J. A. M. A., March 21, 1914.

\* Read before the San Francisco County Medical Society, November 17, 1914.

Case 30 presents an easy transition into another group of cases, the cases presenting a niche, a hole in the wall of the stomach. A true niche is usually found on the opposite side of the stomach. See Cases No. 15 and No. 37.

If you be not familiar with the term niche, let me explain that it is a hole in the wall of the stomach due to a callous penetrating ulcer which fills with bismuth and stays filled. I require three factors to make a diagnosis, first a bismuth filled hole projecting from the stomach shadow; secondly, the bismuth in this hole cannot be moved; thirdly, a pain point coinciding with the niche; fourthly, a gas bubble may be present above the projecting bismuth. I could move the bismuth out of the pseudoniche. As a matter of fact if I do not see a niche once in eighty to one hundred cases sent to me for examination I feel that I am not doing first-class screen work. In Vienna I used to see five or six a month out of their material, in Heidelberg, Halle and Breslau perhaps one in a month. This averaged up about one in eighty or a hundred cases. Seeing these holes in the wall of the stomach is a matter of technic.

Another point which I wish to bring out is that it is impossible in these cases to make any other diagnosis than penetrating ulcer with the possibility of ulcer carcinoma. I go into the subject of the niche so carefully because after making a diagnosis of penetrating ulcer two months ago one of the foremost surgeons of the city said to me, "You don't really see the penetrating ulcer, you infer it from the hour glass stomach." I merely wish to add that Case 11 presented a carcinoma engrafted on an older ulcer which I should undoubtedly have seen as a niche years previously. This presents the old story, the carcinoma patient comes too late to the diagnostic specialist and to the surgeon. In the six carcinoma patients which came to section I was able to make the direct positive localizing diagnosis in four (Cases Nos. 1, 2, 21 and 26); in one case (No. 4), I was able to make a diagnosis of a deforming lesion about the pylorus but was unable to say that it was carcinoma. In the sixth case I merely ruled out the clinical diagnosis of carcinoma of the sigmoid flexure but didn't remark anything about the stomach other than there was a disturbance in antrum peristalsis which might just as well have been due to adhesions from the palpable tumor. Really early diagnosis of carcinoma is just as impossible from the screen examination as it is with other methods. Many times, however, the radiological is the earliest diagnosis, particularly in the cases without palpable tumor. This is particularly true in scirrhus carcinoma (Case No. 2). This offers no great amount of satisfaction to the diagnostician as I have never seen an operable scirrhus. (By scirrhus I mean the tumor type which infiltrates and shrinks the wall of the stomach, not just any hard tumor.) Case 21 is very interesting from a diagnostic standpoint. The surgeon had made a diagnosis of cancer of the stomach, the radiological examination showed a probable carcinoma of the cardiac end of the stomach with marked stenosis of the esophagus. This

screen picture was shown to another medical consultant who later passed esophageal bougies whereafter the patient could eat solid food. He told me that the woman had cardiospasm. Gentlemen, cardiospasm with the ragged picture which this case showed is unknown to me. Cardiospasm cases show a smooth even dilatation. This patient was operated on two months later for a tumor in the abdomen and a carcinoma of the cardiac end of the stomach with general carcinomatosis was found. Cardiospasm with inanition is a very excellent diagnosis to leave alone until every organic lesion has been ruled out. Autopsy usually shows a lesion whether luetic, cancerous, or tubercular.

In my forty cases I have made but one bad positive mistake—No. 17. In a case of pancreatic tumor I saw besides the extraventricular tumor a small stomach almost hour glass in shape owing to smooth indentations on both sides. Peristalsis did not pass over this ring. I had previously only seen this condition in scirrhus carcinoma of the stomach. At operation the surgeon found a ring about the stomach which he called congenital. It did not disappear under anesthesia. I can find nothing similar described in the literature. I also declared a *spastic* hour glass stomach with penetrating ulcer to be an organic hour glass stomach (Case 37) and located a duodenal ulcer on the wrong side of the pylorus (Case 24). Considering that in these forty cases I have made 23 reports on the upper part of the duodenum, 17 negative and six positive in this operative series, I do not believe that the location of the ulcer on the wrong side of the pylorus is a grave offense. Incidentally I did the case without following my regular routine. Lately in these cases with six hour residue and some distortion of the duodenal bulb or cap (the first portion of the duodenum) I merely make a diagnosis of peri-pyloric ulcer, either gastric ulcer with adhesions or duodenal ulcer with a mild grade of pylorostenosis. In regard to a six-hour residue I have never seen a patient prepared properly who did not show either gastric ulcer or pylorostenosis if the residue were of considerable size and the proper meal had been given. The converse is not true.

Now I come to the last point which I shall take up this evening. Cole claims the first portion of the duodenum (the bulb of Holzknecht), the cap of Cole) is always without defect if there be no surgical duodenal ulcer present and no adhesions about the cap. I do not find this true as he claims in 100% of the cases but I certainly agree with Brewer's report of cases which Cole did for him. Brewer found that Cole was correct in 89% of the cases. Cole takes at least 36 plates to make a diagnosis. This is impracticable here as the expense is great. I accomplish nearly the same results on the screen with certain tricks (Bucky effect) and have had success in about the same proportion of cases. I believe that it is of value therefore in about 85% of all cases. Note Case No. 28 particularly where the bulb appeared like a button stuck on the end of the stomach instead of one of the normal shape.

Before I close I wish to call your attention to



Case No. 31, a subphrenic abscess, probably from a perforated duodenal ulcer in which many valuable days were lost in percussing and discussing, in passing stomach tubes and doing blood tests. The screen showed the condition at a flash. High up in the pleural cavity was the diaphragm, beneath that an air bubble about the size of two fists, and beneath that a fluid level which showed waves and splashes as the man was moved about. This merely clinches my belief that the strongest factor in the diagnosis of chronic gastrointestinal conditions is firstly, the history and secondly, the screen examination.

Gastric ulcer	
Penetrating ulcer.....	2
Simple ulcer.....	1
Duodenal ulcer	
Pars superior.....	2
Pars inferior.....	2
Pylorostenosis	
After ulcer.....	4
From adhesions.....	1
Carcinoma ventriculi	
Cardiac, involving esophagus.....	1
Other parts of stomach—	
Operable .....	1
Inoperable .....	5
Carcinoma esophagi.....	1
Tubercular salpinx with adhesions about sigmoid .....	1
Gallbladder adhesions to stomach.....	3
Adhesions about duod.....	1
Abscess probably arising from iliac perforation..	1
Stone in cystic duct.....	1
Inflammatory mass attached to spleen.....	1
Pancreatic tumor.....	1
Coloptosis .....	1
Visceroptosis .....	1
Adhesions about right dome of diaphragm.....	1
Gastroenterostomy .....	1
Chronic appendix.....	2
Subdiaphragmatic abscess.....	1
Adhesions of cecum to belly wall.....	1
Hypernephroma (growth above kidney) and gallstones .....	1
Retroperitoneal sarcoma (testicle).....	1
Abscess of liver.....	1

Case 1. Clin. diag. or question: Carcinoma ventriculi? probably not at pylorus. Clinical points: Pain in abdomen 14 months. No obstructive symptoms. No vomiting, except three times in month previous to operation. Lost 55 lbs. in one year. No palpable tumor. Radiological diagnosis: Inoperable carcinoma of pyloric end of stomach adherent to neighboring organs. Radiological points: Defect in stomach outline. Operative diagnosis: Inoperable carcinoma of stomach (pyloric end) grown into pancreas, adherent to liver.

Case 2. Clin. diag. or question: Carcinoma in abdomen, point of origin? Clinical points: Loss of weight followed by ascites with enlarged liver and palpable tumor in region of splenic flexure. Radiological diagnosis. Inoperable scirrhus carcinoma of stomach with adhesions. Radiological points: Contracted stomach with smooth irregular outline. Operative diagnosis: Inoperable scirrhus carcinoma of stomach. Pylorus and cardia free. Large cauliflower growth on back wall of stomach.

Case 3. Clin. Diag. or question: Tubercular ulcer of sigmoid. Clinical points: Virgin, difficult to examine, pain and rigidity in sigmoid region. Guaiac ++ in stool. Radiological diagnosis: Adhesions about sigmoid flexure, no gastric or duodenal ulcer, probably no tuberculous ulcer of colon. Radiological points: Colon filled in entirety, absence of Stierlin's sign (absence of bismuth in colon about tuberculous ulcer), bulbus perfect.

Operative diagnosis: Tubercular salpinx adherent to sigmoid flexure, no ulcer of sigmoid.

Case 4. Clinical diag. or question: Ulcer or carcinoma of stomach? Gastric ptosis. Clinical points: Chronic indigestion for years with recent great loss of weight, no gastric or stool examinations were made, no palpable tumor. Radiological diagnosis: Probable old ulcer at pylorus with adhesions, no duodenal ulcer. (NOTE. Correct wording of radiological diagnosis should have been deforming lesion near pylorus, ulcer or carcinoma?). Radiological points: Enormous bulbus (associated most often with achylia), notch near pylorus constant during two days, bulbus perfect, stiffness of stomach wall on pressing in with finger. Operative diagnosis: Beginning carcinoma of lesser curvature of stomach with much involvement of glands. Little of stomach.

Case 5. Clinical diagnosis or question: Cholelithiasis, possibility of duodenal ulcer. Clinical points: Cholelithiasis history, pain in right hypochondrium, vomiting. Radiological diagnosis: Adhesions about pylorus, duodenum and gall bladder. No radiological signs of gastric ulcer. No duodenal ulcer. Radiological points: Stomach pulled markedly to right. Operative diagnosis: Adhesions at the pylorus and in gall bladder region. No cholelithiasis. No duodenal or gastric ulcer.

Case 6. Clinical diagnosis or question: Pyloric stenosis. Clinical points: Vomiting for eight years. No blood in vomitus. Residue in stomach. Radiological diagnosis: Pyloric stenosis. Adhesions about pylorus, duodenum, and gall bladder. Radiological points: Complete retention of bismuth eight hours after examination. Residue half-moon shaped. Operative diagnosis: Pyloric stenosis due to old ulcer. Adhesions about pylorus, duodenum and gall bladder.

Case 7. Clinical diagnosis: Carcinoma of splenic flexure. Possible abdominal aneurysm. Clinical points: Chronic indigestion. Palpable tumor. No stomach examination had been made. Radiological diagnosis: Abdominal tumor not connected with splenic flexure. Long so-called ptotic stomach. Radiological points. Palpable tumor at level of stomach bubble to right of splenic flexure. Disturbances in peristalsis near pylorus. Operative diagnosis: Carcinoma of lesser curvature of stomach chiefly involving glands. No tumor or splenic flexure.

Case 8. Clinical diagnosis or question: Cholelithiasis. Stenosis of small gut? Clinical points: No jaundice. Vomiting. Abdominal pain. Not localized in any particular spot. Appendix had been removed. Radiological diagnosis: Adhesions about gall bladder and pyloric region. No radiological signs of stenosis or gastric ulcer. No duodenal ulcer. Radiological points: Stomach pulled markedly to right. Operative diagnosis: Adhesions about pylorus and gall bladder region. No cholelithiasis. No gastric or duodenal ulcer.

Case 9. Clinical diagnosis or question: Gastric or duodenal ulcer? Clinical points: Vague abdominal and gastric disturbances since childhood. Radiological diagnosis: No radiological signs of gastric or duodenal ulcer. Probable adhesion of duodenum to belly wall. Radiological points: Constant notch about size of walnut on greater curvature of stomach. (Due to pressure of gas distended colon.) Operative diagnosis: Old cicatrix? at pylorus. Adhesions about duodenum. No duodenal or active gastric ulcer.

Case 10. Clinical diagnosis or question: Pylorostenosis. Malignancy? Clinical points. Duodenal ulcer perforation one year ago. Coffee ground vomitus for last few days. Marked loss of weight in past year. Radiological diagnosis: Marked gastrectasis, pyloric stenosis with adhesions about pyloric, duodenal and gall bladder regions. Radiological points: Almost complete retention of

bismuth six hours after meal. Halfmoon-shaped residue. Peristalsis active, at first, gradually disappearing. Operative diagnosis: Enormously dilated stomach, pylorostenosis. Adhesions in and about oviducal, duodenal and gall regions. No malignancy.

Case 11. Clinical diagnosis: Gastric ulcer. Malignancy? Clinical points: Vomiting. Loss of weight in last months. Old ulcer history. Radiological diagnosis: Fungus carcinoma of pyloric end of stomach adherent to neighboring organs. Radiological points: Defect in stomach shadow. Operative diagnosis: Cancer of pylorus arising from old callous ulcer which had at some previous time perforated into liver.

Case 12. Clinical diagnosis or question: Malignant tumor in stomach. Origin? Clinical points: Rapidly growing tumor in left part of abdomen: 60 lbs. loss of weight in three months. Radiological diagnosis: Radiologically negative stomach and duodenum. No constriction of large gut. Tumor probably not arising from colon. Radiological points. Fluid levels. Operative diagnosis: Abscess arising probably from small intestine infiltrating but not ulcerating colon. Diagnosis made after two operations.

Case 13. Clinical diagnosis or question: Duodenal ulcer? Malignancy? Clinical points: Ulcer history. Loss of weight. Radiological diagnosis: Ptois and dilatation of stomach. Pylorostenosis with adhesions about pylorus. Duodenal ulcer? Radiological points: Almost complete retention of bismuth six hours after meal. Operative diagnosis: Marked pylorostenosis due to adhesions about duodenum and pylorus. Pancreas involved in mass. Probable duodenal ulcer. ? of malignancy.

Case 14. Clinical question or diagnosis: Stone in cystic duct? Pylorostenosis? Clinical points: Vomiting lasting for weeks without being able to retain any kind of food. Once jaundiced. Radiological diagnosis: No radiological signs of gastric ulcer, pyloro-stenosis, or carcinoma. Operative diagnosis: Atrophied gall-bladder. Stone in common duct. No pylorostenosis.

Case 15. Clinical diagnosis or question: Gastric ulcer. Pylorostenosis? Malignancy? Clinical points: Two and a half years' pain, relieved by vomiting. Aggravation of symptoms in last months. No hematemesis. Radiological diagnosis: Hour glass stomach (organic). Callous penetrating ulcer of upper sack. No duodenal ulcer. Radiological points. Haudek's niche with air bubble. Two separate sacks. Operative diagnosis: Callous ulcer of lesser curvature in organic upper sack of hour glass stomach. No duodenal ulcer.

Case 16. Clinical diagnosis or question: Gallstones. Clinical points: Tenderness in right hypochondrium on pressure. Vague distress to left of navel. Radiological diagnosis: No duodenal ulcer. No radiological signs of gastric ulcer or neoplasm. Possible tumor in region of left kidney. Radiological points: An inverted V-position of colon in erect posture with text book position of colon in supine position. Operative diagnosis: No ulcer of duodenum or stomach. Attached to spleen is a tumor mass of omentum about size of fist. Inflammatory in nature? No gallstones.

Case 17. Clinical diagnosis or question: Pancreatic tumor. Clinical points: Diabetes and tumor in abdomen. Loss of weight. Total HCl, 8. Radiological diagnosis: Palpable tumor not arising from stomach or duodenum. Scirrhus carcinoma of stomach. No duodenal ulcer. Radiological points: Small contracted stomach with constant narrowing about one and a half inches above pylorus. No peristalsis was noted above this ring. Operative diagnosis: Pancreatic cyst about size of tumor. No carcinoma but a ring about one and a half inches above narrowing of stomach which was present during the entire operation. No duodenal ulcer.

Case 18. Clinical diagnosis or question: Chronic appendicitis? Clinical points. Vague abdominal distress. Diarrhea. Radiological diagnosis. Enteroptosis. No radiological sign of chronic appendix. No gastric or duodenal ulcer. Operative diagnosis: Marked ptosis of stomach. No gastric or duodenal ulcer. Chronic appendix completely bound down.

Case 19. Clinical diagnosis or question: Ulcer location? Malignancy? Clinical points: Seven years of history of pain at varying times after eating. No vomiting until recently. Tarry stools. Rapid loss of weight. Radiological diagnosis: Stenosis of pars inferior duodeni. Stenosis has large spastic component. Ulcus duodeni? Radiological points: Duodenum shows peristaltic waves without advance of contents. Operative diagnosis: Ulcer of pars inferior duodeni. Old healed ulcer of greater curvature of stomach.

Case 20. Clinical diagnosis or question: No real clinical diagnosis. Possible duodenal ulcer. Clinical points: Vague abdominal distress. Some loss of weight. Vomits every morning since six years. Radiological diagnosis: No duodenal ulcer. No radiological signs of gastric ulcer or neoplasm. Isolated coloptosis atony of esophagus. Radiological points: Broad band of bismuth throughout esophagus remaining 30-40 seconds. Operative diagnosis: No gastric or duodenal ulcer. No gallstones. Appendix freely movable. Coloptosis.

Case 21. Clinical diagnosis or question: (Surgeon) Gastric carcinoma. (Medical Consultant) even after radiological examination, cardiospasm. Clinical points. One year vague digestive disturbances. Sensation of food sticking. Rapid loss of weight. Vomited solid food for months. After sounding by consultant could eat solid food. Two months later abdominal tumor. Radiological diagnosis: Stenosis of esophagus. Carcinoma of cardiac end (?) of stomach involving esophagus. Radiological points: Fluid bismuth mixture halts in esophagus assuming funnel form. On horizontal fluoroscope (trochoscope) cardiac end of lesser curvature is ragged. Bulbus duodeni perfect. Operative diagnosis: Two months later. Carcinoma of cardiac end of stomach involving esophagus. General carcinomatosis of abdomen including metastasis in ovary.

Case 22. Clinical diagnosis or question: Carcinoma of esophagus. Clinical points: Unable to swallow solid foods. Sensation of food sticking for some months. Radiological diagnosis: Stenosis of esophagus. Carcinoma? Radiological points: Bismuth halts two inches above esophagus for ten minutes. Operative diagnosis: Carcinoma of esophagus.

Case 23. Clinical diagnosis or question: Before first operation—appendix. Before second operation, two months later—subphrenic abscess. Clinical points: Mass in region of appendix. Temp. 103°. Pulse 140. White count 24,000. Septic temp. Radiological diagnosis. After first operation. No radiological signs of gastric or duodenal ulcer nor of neoplasm. No positive radiological diagnosis possible. Radiological points: After first operation. Fixation of right dome of diaphragm seemed to make clinical diagnosis stronger. Operative diagnosis: First operation. Appendix not cause of trouble. No focus of pus found. Mass was omentum. Second operation. Nothing found except adhesions between liver and diaphragm.

Case 24. Clinical diagnosis or question: Ulcer. Where? Clinical points: Hematemesis, six days before. Ulcer history. Pylorostenosis had not been ruled out clinically. Radiological diagnosis: Ulcer (probably gastric). No duodenal ulcer. Real diagnosis should have been peripyloric ulcer. Radiological points: Bulbus duodeni well filled out. (Don't out of routine.) Six hour residue. Radiological diagnosis: Duodenal ulcer. Mild grade of pylorostenosis.

Case 25. Clinical diagnosis or question: Previous to radiological examination. Adhesions. Good functioning gastroenterostomy? Clinical points: Patient complains of pain but no vomiting at present. Operated three months ago for gastric ulcer. Radiological diagnosis: Good functioning gastroenterostomy wound. Pyloric end of stomach blocked off. Radiological points: No bismuth seen to enter duodenum. Operative diagnosis: Informed afterwards that pyloroplasty had been performed.

Case 26. Clinical diagnosis or question: Carcinoma ventriculi. Clinical points: Large tumor mass in right hypogastrium since three months tumor or mass about size of walnut in epigastrium, movable. Much vomiting in last three months until one week ago; 22 lbs. loss in weight. Radiological diagnosis: Tumor outside of stomach continuous with liver shadow. Infiltration of pylorus. Carcinoma ventriculi. Radiological points: Stomach normal in shape. Movable tumor coincides with pylorus on palpation and moves with it. Antrum peristalsis defective. Slight irregularity of lesser curvature of stomach, one-sixth residue in stomach despite good peristalsis.

Case 27. Clinical diagnosis or question: Pylorostenosis? Clinical points: 23 years old, 25 lbs. loss of weight in last few months. Operated on for appendicitis to cure stomach two and one-half years ago. Vomited after meals off and on for last years. For nine years pain in epigastrium in afternoons and at 11 P. M. Eating made pains worse. Radiological diagnosis: Pylorostenosis. Old peripyloric ulcer, probably duodenal in origin. Adhesions in pyloric, duodenal, and gallbladder region. Radiological points: Large dilated stomach drawn to right. "Stenosen" peristalsis, i. e., violent peristalsis. After 24 hours one-third bismuth residue in stomach. Operative diagnosis: Pylorostenosis. Dense mass of adhesions involving gallbladder and duodenum to lesser curvature of stomach.

Case 28. Clinical diagnosis or question: Peptic ulcer. Radiological diagnosis: No radiological signs of gastric ulcer. Hypersecretion. Duodenal ulcer? Radiological points: No residue in stomach. Button bulbus. Fasting stomach filled with fluid (steerhorn stomach). Operative diagnosis: Duodenal ulcer.

Case 29. Clinical diagnosis or question: Chronic appendix. Duodenal ulcer? Clinical points: Tenderness in right iliac region. Vague gastric symptoms. Radiological diagnosis: Chronic appendix hanging from lower end of cecum? Radiological points: Bulbus perfect. Operative diagnosis: Chronic appendix not retrocecal.

Case 30. Clinical diagnosis or question: Ulcer? Carcinoma? Clinical points: 14 years ago stomach pleated for gastric ulcer. Six months ago began to lose weight. No vomiting. Appetite poor. Radiological diagnosis: Hourglass stomach, probably spastic. Spasmodic stenosis of duodenum in neighborhood of ligament of Treitz. Probable old gastric ulcer with more recent ulcer of the lower part of duodenum. No duodenal ulcer of upper part. Adhesions. Radiological points: Pseudo-niche on posterior wall of stomach. Knife-like indrawing of stomach, dividing it into two parts. Reversed motion of duodenal contents (so-called antiperistalsis). Operative diagnosis: Ulcer of lower part of duodenum. Old gastric ulcer (thickening at pylorus).

Case 31. Clinical diagnosis or question: Inflammatory condition of abdomen. Carcinoma? Clinical points: Six months ago gas formation, six weeks ago stomach specialist. No dark stools. No vomiting. Four weeks ago severe attack of abdominal with "hard muscles" after lobster dinner. No fever. In bed one week. One week ago

no free HCl. Ascites. Swelling of legs. Radiological diagnosis: Gas containing subphrenic abscess on right. Adhesions about duodenum, distortion of duodenum and large bowel. Duodenal ulcer? Radiological points: Beneath diaphragm a fluid level which shows waves on moving patient. Duodenum distorted lying along base of liver shadow moving with it. Liver indents upper part of stomach. Operative diagnosis: Subdiaphragmatic abscess. Large amount of stinking pus exudes from wound.

Case 32. Clinical diagnosis or question: Adhesions. ? cause of vomiting. Neoplasm? Clinical points: Six weeks ago ectopic pregnancy? Removal of tumor and portion of gut. Radiological diagnosis: Pylorostenosis. Infiltration of pylorus. Carcinoma ventriculi? Fluid levels probably indicate obstruction to bowel. Radiological points: Disturbance of antrum peristalsis which is violent. Fluid levels in bowels (constant); four-fifths bismuth residue after six hours. Operative diagnosis: Adhesions which kinked gut in places. Pylorus blocked by adhesions. No carcinoma.

Case 33. Clinical diagnosis or question: Ulcer? Clinical points: Two years ago gas pains. No vomiting. Pain on right just below navel. Lost 10-15 lbs. weight. Radiological diagnosis: Duodenal ulcer with beginning pylorostenosis or gastric ulcer at pylorus. (Peripyloric ulcer.) Radiological points: Six hours residue. Operative diagnosis: Gastric ulcer at pylorus.

Case 34. Clinical diagnosis or question: Ulcer? Adhesions? Clinical points: One year ago appendectomy. Pain has no relation to eating. Radiological diagnosis: No radiological sign of gastric ulcer. Probable adhesions about stomach, cecum, proximal part of transverse colon. Chronic constipation of ascendens type. Radiological points: Stomach and colon transversum only fairly movable. Operative diagnosis: Adhesions from cecum to belly wall. Jackson's membrane about colon.

Case 35. Clinical diagnosis or question: Abscess of liver. Amebiasis? Carcinoma ventriculi? Clinical points: One year diarrhea with mucus, blood, pus. Rapidly growing tumor in right hypochondrium for last few days. Radiological diagnosis: Tumor probably connected with liver. Radiological points: Stomach pressed far to left. Indentation by liver. Antrum formation of stomach distorted. Operative diagnosis: Liver abscess.

Case 36. Clinical diagnosis or question: Carcinoma of stomach? Gallstones. Malaria? After stool and radiological examination—malignancy? Adrenal disease? Clinical points: Gallstone attacks in previous years. Nausea, retching, belching after meals, six months' duration; 50 lbs. loss in last six months a/c daily diarrhea. Asthenia. Temperature 102° every second night. Negative malarial parasites. No occult blood. Stool (Schmidt test diet) type of early toxic diarrhea. No abnormal elements. B. P. 150 mm. Radiological diagnosis: No radiological signs of carcinoma of stomach. Tuberculosis of right apex. Radiological points: Rigidity of upper part of stomach. Operative diagnosis: Gallstones. Hypernephroma.

Case 37. Clinical diagnosis or question: Ulcer? Clinical points: Twenty-two years suffered off and on with gas pains after meals. Worse for last six months. Occasional vomiting. Radiological diagnosis: Callous penetrating ulcer of stomach. Organic hour-glass stomach. Radiological points: Niche (hole in the wall of stomach). Lower sack of stomach takes 25 minutes to fill on two successive days. Operative diagnosis: Ulcer penetrating into pancreas. Large dilated stomach with infolding but no hour-glass stomach.

Case 38. Clinical diagnosis or question: Vis-



ceroptosis. Clinical points: Appendix operation two and a half years ago. After operation vomiting. Since then miserable. Radiological diagnosis: No radiological signs of gastric or duodenal ulcer nor of any stenosis. Constipation of ascendens type. Radiological points: Bulbus duodeni perfect. Operative diagnosis: No gastric or duodenal ulcer. Visceroptosis.

Case 39. Clinical diagnosis or question: Appendix? Ulcer? Carcinoma? Clinical points: Five years ago severe pain in abdomen. Since one year severe pain in epigastrium right after eating. Nausea in mornings. No pain if he doesn't eat. Never vomited. Lost 20 lbs. in last four weeks. Radiological diagnosis: No radiological signs of active gastric ulcer or neoplasm. Probable chronic appendix (retrocecal?). Radiological points: Point of maximum pain coincides with cecum. Operative diagnosis: Old healed ulcer of stomach connected by band of adhesions with gallbladder. Chronic retrocecal appendix.

Case 40. Clinical diagnosis or question: Gastric ulcer with perforation? Carcinoma ventriculi? After radiological examination—gastric ulcer with perforation? Retroperitoneal sarcoma with metastases. Clinical points: Acute pain in left hypogastrium for several months. Pain constant. Two months ago testicle removed. No blood in stools. Age 27. Rapidly growing tumor in left hypogastrium for several days. Radiological diagnosis: Large dilated stomach. Extraventricular tumor. Radiological points: Pseudo-filling defect. Operative diagnosis: Retroperitoneal sarcomatous metastases (cystic and solid).

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#### Discussion.

Dr. W. C. Alvarez: There is little to add to this interesting paper. I am only afraid that in confining himself so closely to this phase of the subject, Dr. Lippman may seem to have made the subject clearer than it really is. I think that those who do this work find that the average case is not as clear and as beautiful as these that we have had described to us tonight. So many show either nothing definite or functional disturbances which may or may not have pathological significance. Dr. Lippman's material may be unusual in that it is largely referred to him by surgeons who would be more likely to get severe, long-standing surgical cases. Statistics compiled by Fenwick, Friedenwald and others show that about 85% of patients with gastrointestinal disease have functional disturbances. Granting that every year better diagnostic methods transfer a number of cases to the organic column, still, I think even in consultant practice, we will find eight or nine doubtful or normal cases to one in which there is a beautiful ulcer or carcinoma defect, hour-glass stomach, etc. Even in the ulcer cases I believe we will oftener find disturbances of function than craters and signs of perforation.

A word as to six hour stasis as diagnostic of organic lesions at the pylorus. I frequently find one or two ounces of bismuth in the stomach six hours after a meal when no pyloric lesion can be found. This may be present on occasions and absent on others. Very interesting is the fact that the stomach will empty rapidly in the first forty-five minutes and then there will be practically no change in the remainder for six to eight hours. In these cases I believe the trouble is to be found in the intestine. I saw recently a case in which a half ounce of bismuth remained in the stomach twenty-three hours. There was no sign of ulcer or carcinoma and the other findings were against

such a diagnosis. Besides, she had had stasis symptoms for five years. Fig-skins were vomited eight days after she had eaten them. What she had was a markedly prolapsed uterus which I believe can explain the findings.

Dr. Lippman, closing discussion: My material is divided into consultation work chiefly from one group of surgeons and several groups of medical men—I average about 72% nonoperative and 28% operative cases. Dr. Alvarez mentions one or two ounces of bismuth residue after six hours—I only use one and one-third ounces for a meal and this would constitute a complete retention. I wish to reiterate I have never seen complete retention nor a large (I emphasize the word large) residue without organic lesion of some kind. The case which Dr. Alvarez quotes is unfortunately not an operated case. I confined my talk to operatively confirmed diagnoses. I think with the history which he offers and the findings that he might have found as I have in several similar cases reversed motion of the duodenal contents (so-called antiperistalsis) and duodenal ulcer of the lower part of the duodenum.

### GENERAL PARESIS AND ITS RELATION TO SYPHILIS, WITH A REPORT OF THE PATHOLOGIST OF NAPA STATE HOSPITAL.

By A. W. HOISHOLT, M. D., Medical Superintendent, Napa State Hospital; Clin. Prof. Psychiatry, Stanford University.

General paresis, general paralysis of the insane or softening of the brain was first spoken of by Willis in 1672, but was not recognized and described as a disease entity until 1822, when the French alienist, Bayle, pronounced the somatic and psychic symptoms manifestations of one and the same disease. From 1822 to the middle of the last century, the efforts of investigators were centered on clinically outlining the disease-picture. At the end of the fifties, observations began to be made of the frequent occurrence of syphilitic infection in the history of general paralytics. Esmarch and Jessen in 1857, Steenberg in 1860, and Jesspersen in 1874 first drew attention to this relationship; the latter in an article entitled "*Is Progressive General Paresis Due to Syphilis?*" Careful statistic researches in this direction were later made by Westphal, Erb, Fournier and Krafft-Ebing, and in the course of years, the percentage of general paresis, showing a history of probable syphilitic infection, gradually rose until it reached 85 to 90%, and in the cases of juvenile paresis, even higher. The medical profession was therefore quite ready to accept the results which were established by the Wassermann and Noguchi reactions, the Nonne—Phase I reaction of globulin increase, and the increase of the lymphocytes in the cerebrospinal fluid. Since these sero-diagnostic tests (known also as "the four reactions") have been recognized as indicators of luetic nerve degeneration, the assertion that "Without a previous syphilitic infection, there can be no general paresis" has become generally accepted.

The question was finally definitely decided when Noguchi a couple of years ago succeeded in demonstrating the finding of *treponema pallidum* in the brain in about 25 per cent. of 200 cases of general paralysis and especially when he, over a year ago, was able to produce typical syphilitic

sclerosis containing the syphilitic micro-organism in the testes of rabbits by inoculation of an emulsion of the brain obtained from a paretic individual.

Although the direct relation of syphilis to general paresis has thus been established as an absolute fact, we are not able to explain why it is that paresis only occurs in about 2 to 5 per cent. of all cases. Noguchi found in experiments on rabbits that, while luetic disease made its appearance in all body organs soon after inoculation, it took three to five months before the lues invaded the brain, which he ascribes to the great power of resistance of nerve tissue to the invasion by the treponema. The specimens of the latter found in the brain show an attenuation probably indicating a diminution of virility. It was thought by Kraepelin that intermediary products of decomposition, as in metabolic disease, may play a role in this resistance; especially has this been suspected in cases where alcoholism complicates lues. The influence of alcohol upon fatty substances may, according to Dr. Dedichen of Norway, cause a deterioration of the network of lipid substances, which penetrates the living cell and acts as a protection preventing the decomposition of the cell-contents by warding off the contact with substances foreign to the cell-body. According to research work by Bang, the lipoids are of perhaps greater importance to the human organism than the albumins, playing a role in the action of all enzymes and ferments.

But besides alcohol, there are other factors which may play a role in paresis. Some writers claim that general paralysis is a disease of civilization. Uncivilized peoples are but little or not at all susceptible, or only become so after they have become civilized. It is a well known fact that early generations of negroes, after immigration into the United States, seemed free from paresis, although they often became infected with syphilis. It is in the later generations of the colored race that paresis has been found increasingly prevalent. The same is true of Chinese and Japanese. I have observed but one or two cases of paresis among about 350 Chinese admissions to the Stockton State Hospital. About 80 per cent. of the inhabitants of Abyssinia are said to be syphilitic, but paresis is not met with there. Norway and Iceland are said to be almost free from general paralysis. Westhoff, a German writer, is quoted by Dedichen as saying that he looks upon the disease as specifically one of the German race. He amusingly concludes that the higher the anthropological standing of a race, the more apt is such race to fall a prey to the disease.

A secondary influence upon the course of a case of general paresis is that of endogenesis or of endogenetic psychoses. Most authors speak of a hereditary disposition in 40 to 50 per cent. of the cases. General paralysis has been divided into different forms. Kraepelin speaks of a demented, a depressive, a stuporous, a katatonic, a paranoid, an expansive, a circular, an agitated and a delirium tremens like form, which apparently is an expression of the mode of reaction of the individual to the morbid process. In many instances it would even seem that the varied psychotic pictures can

only be explained by an accidental coincidence of two diseases, perhaps by another form of psychosis paving the way for the paresis or perhaps by the paralytic incipency setting free a latent predisposition to insanity.

Notwithstanding the above recent developments in the relationship of lues to paresis, an understanding of the form of this relationship has not been reached. It has long been recognized that paresis does not belong in the tertiary stage of syphilis, and it was many years ago put in a category with *tabes dorsalis* as a para or metasymphilitic disease. Strümpell compared the relation of metasymphilitic disease to syphilitic infection with that of post-diphtheritic paralysis to the diphtheritic throat infection. It illustrates this relationship but the parallel is not completely covered when considering the progressive course of metasymphilitis. Symptomatically, we are still in the dark. With all clinical and serological tests at our disposal, we still encounter great difficulty in the differential diagnosis of lues cerebri; especially between the disease pictures, which have been termed syphilitic pseudoparalysis, where there is a diffuse meningo-encephalitis, and paresis. No absolute differentiating symptoms have in fact, to date, been discovered. It is only by weight of evidence that one can distinguish them, and in individual cases, one may sometimes be absolutely unable to decide. A mental deterioration with the occasional presence to a more limited extent of somatic symptoms is more general in paresis; while the recording faculty is less faulty, the intelligence defects more prevalent in spots only, and the judgment less deteriorated in the cerebrospinal lues than in paresis. In the former there is lacking, as Professor Hoche of Freiburg, Germany, puts it, the peculiar veil which it is customary to find enshrouding the whole mental being of the general paralytic. In the former case, the patient likewise does not himself look with such complete indifference upon severe somatic symptoms present; the pseudoparalytic may even be hypochondriacal in reference to these symptoms.

As to the somatic symptoms themselves, they do not serve as a criterion between the two. The pupillary symptoms may be the same; the speech disturbance likewise, though the cerebral syphilitic patient is more apt to be aphasic or show speech defects of a bulbar type. Irregularity and rapid change in the course of the symptoms, and a slow development of focal symptoms without apoplectic-form attacks, speak more for brain syphilis. A gradual progressive increase in symptoms characterizes the latter, as a rule, only up to the time when antisymphilitic treatment is instituted.

Many physicians make use of the favorable result or failure of an antiluetic treatment as a means of distinguishing between the two forms. As this therapeutic test frequently gives positive results in brain lues, it is well indicated, even if it sometimes fails where the syphilitic process is very diffuse, perhaps because of its non-reaction to our present syphilis therapy or because the treatment was started too late.

In most cases, however, the differential diagnosis

is dependent upon a careful weighing of the different viewpoints and as Hoche says in his recent work, "there will undoubtedly remain a certain percentage of cases in which the most experienced will not be able, with certainty, to make the differentiation between brain syphilis and paresis during the life of the patient, nor will he in such cases any longer be able with certainty to differentiate them by post mortem findings."

With regard to "the four reactions," it may be said that a high cell-count was formerly considered indicative of brain syphilis, but there are many exceptions. Dr. Harrison reports in 22 cases of paresis found among the patients admitted to the Napa State Hospital during the first six months of 1914 that the cell-count was in six cases over 100; in one case, 322, and in two others, 170 and 182, respectively. The variations in the remaining "three reactions" do not at the present day give one the means of differential diagnosis between these two conditions (brain syphilis and general paresis), which at one time was the current belief.

In July, 1897, I published in the "Occidental Medical Times" a statistical report of 69 cases of general paresis admitted to the Stockton State Hospital during seven years, inclusive of the years 1890 to 1896. Out of 1,345 first admissions the average percentage of paresis was 5.13 per cent. Since then no statistical reports have been made showing the prevalence of paresis in California. In publishing the appended statistics from the Napa State Hospital, covering the period since I assumed charge of the institution, it is realized that the figures are small and the period of short duration, extending over but one year.

The thirty-four cases have all been studied serologically, as well as clinically, giving the subject of the differentiation of the syphilitic pseudo-paralysis from general paresis a careful consideration.

Period of admission.	Males admitted	Females admitted	Total admitted	Number parietic women	Number parietic men	Total number parietics	Ratio women to men	Total percentage among men and women
July 1, '13, to Jan. 1, '14.	107	53	160	11	1	12	1:5.5	7.5
Jan. 1, '14, to July 1, '14.	159	71	230	20	2	22	1:4.46	9.56
Tot. average.							1:4.81	8.71

According to this table, 8.7 per cent. of all mental cases admitted during the last year have been cases of general paresis. In addition to the 34 cases of paresis admitted during the year, we have received five cases diagnosed as cerebrospinal lues. Two of these are women: one with a history of a hemiplegic attack a few months before admission, and complete restoration after antiluetic treatment; the other with history of miscarriage, certain somatic symptoms; sluggish pupillary reaction, absent left knee-jerk; fully oriented; no mental deterioration; Wassermann triple x in blood and liquor; cell-count 136, reduced to 35 after salvarsan treatment. The case appears com-

plicated with a manio-depressive psychosis. Of the three men one has a history similar to the one just reported. A second case is an alcoholic pseudo-paralysis with lues, with high cell-count; now fast improving. The third is also an alcoholic with symptoms dating back a number of years, and all four reactions positive. Even if the five brain-syphilis cases be added to the paresis, we get for the year a percentage of 10 per cent., which is considerably less than percentages reported abroad, where they have varied from 15 to 22 per cent. Women admitted to Napa State Hospital, judging by the above report (1:4.8), are 50 per cent. less frequently sufferers in proportion to men than are women in Europe.

Napa State Hospital, October, 1914.

### LABORATORY REPORT, NAPA STATE HOSPITAL.

By W. T. HARRISON, M. D.

During the biennial period ending June 30, 1914, the Wassermann reaction has been applied to the blood and spinal fluid only in suspected cases, but beginning with July, 1914, a routine examination of the blood serum is being made in all new admissions to the Napa State Hospital. An effort is also being made to extend this examination to the families of patients showing positive reactions.

On June 30, 1914, there were present in the hospital 52 patients showing positive Wassermann reactions in both the blood serum and spinal fluid—44 men and 8 women. Of these, all but three showed a definite increased globulin content in the spinal fluid, and all showed an increased lymphocyte count, ranging from 12 to 360 per cu. mm., more than 100 lymphocytes being observed in 13 cases. One additional case, a man, showed a positive reaction in the blood serum, but died before the spinal fluid could be examined. Post mortem examination showed the characteristic brain changes of paresis.

The original Wassermann reaction is employed, using as antigen a cholesterinized, alcoholic extract of human heart muscle. This reagent has been accepted as the most reliable, after having compared the results obtained with various extracts, including alcoholic extract of luetic foetal liver, alcoholic extract of normal organs, and the acetone insoluble fraction; the last two were found to yield unreliable results and were early discarded.

A series of 157 specimens, both blood serum and spinal fluid, were examined, using both the cholesterinized and the luetic extract in each case. Eighty-eight of these specimens, 53 blood serums and 35 spinal fluids, yielded positive results with the cholesterinized extract; 78 specimens, 48 blood serums and 30 spinal fluids, yielded positive results with the luetic extract. Lues was present without question in all cases reacting positively to



the cholesterinized extract, as evidenced by definite involvement of the central nervous system.

The intensity of the reactions follows:

Blood serum.			
	Complete inhibition	Partial inhibition	Slight inhibition
Cholesterinized extract...	46	5	2
Luetic extract .....	36	5	7

Spinal fluid.			
	Complete inhibition	Partial inhibition	Slight inhibition
Cholesterinized extract...	30	4	1
Luetic extract .....	21	5	4

It will be observed that in the case of the blood serum 5 specimens responded positively to cholesterinized extract and negatively to luetic liver; of these, 2 showed complete, 1 partial, and 2 slight, inhibition to cholesterinized extract. Five spinal fluids also showed negative results to luetic liver, while to the cholesterinized extract, 4 showed partial, and 1 slight, inhibition. In all cases the maximum quantity of blood serum used was 0.1 c.c., and of spinal fluid 0.2 c.c.

The objection that the cholesterinized extract is perhaps too sensitive has not been proven in our experience, as in all cases we have been able to obtain a definite history of infection or clinical or post-mortem evidence of lues.

Results obtained in the examination of a total of 300 cases, together with the case of preparation and comparative permanency of the cholesterinized extract has caused us to use it exclusively in routine examinations.

Napa State Hospital, October, 1914.

## THE HARRISON ANTI-NARCOTIC ACT.

By FELIX LENGFELD, San Francisco.

For many years our state legislatures have been passing laws to limit the use of habit-forming drugs. In 1913 and 1914 no less than 18 states passed or strengthened anti-narcotic laws, and it is safe to say that legislators were no more active in those two years than in the five preceding. Government statistics show that the importation of opium, coca, and their alkaloids remained practically constant, and it seems probable that the quantities smuggled and therefore not appearing in the statistics, increased materially.

It has been stated that in some of the Southern States three-quarters of the adult negroes used cocaine, and it is in those states that the regulations against cocaine were particularly radical, and yet apparently without result. State regulation failed because it was easy to send the drugs from one state to another. If a single state had poor laws or laws poorly enforced, the purveyor of cocaine or morphine could purchase in that state and send the drug into another state where its underground sale was remunerative. If he could not trust the express companies, he could put 100 or 200 ounces into a grip and carry it himself, feeling certain of a profit of \$5.00 or more per ounce.

Federal control seemed necessary, and to be effective the law must permit the drug to be watched from the moment it was imported or manu-

factured until consumed. This could only be done by making it a revenue law. The Constitution of the United States does not permit the Government to do police duty within the state, but it does permit it to make such laws as are necessary to provide revenue, and to make any regulations it shall deem fit in connection with such law. Therefore the enforcement of the Harrison Act is entrusted to the Division of Internal Revenue, and the Act is called a Revenue Act.

Had this been done by a body less august than the Congress of the United States we should be tempted to call it a subterfuge, for nobody believes that the Harrison Act will add a cent to the treasury of the United States. On the contrary, everybody knows that a large appropriation will be necessary to enforce it. We may be sure, however, that it will be enforced without fear or favor.

In this JOURNAL we need only consider this Act in relation to physicians. Under the act, every physician who desires to use, prescribe, or even have in his possession, any preparation of opium or coca leaves (with certain exceptions to be considered later) must register with the Internal Revenue Collector of his district, receiving a registry number, which is his for life unless revoked for cause. He must pay \$1.00 per annum, receiving a special tax stamp, bearing his name, registry number, and "This must be posted in a conspicuous place" (Treasury Decisions March 11, 1915, page 50). Having complied with these formalities, he may write prescriptions for opium, coca leaves, or any of their preparations, alkaloids, or derivatives. These prescriptions can be written on any piece of paper or prescription blank, but before filling the druggist must see that they bear the date, name, and address of the patient, and the signature, address and registry number of the physician. The physician is not required to keep any copy of such prescriptions. The physician therefore has no difficulty about getting these drugs for his patients, but should he want them for his pocket case, handbag, or office, the process is somewhat more complicated. Upon payment of a dime he can obtain from the Collector of Internal Revenue a book containing 10 duplicate order blanks. Each of these blanks bears his name, address and registry number, and he is responsible for them, must see that they are properly used, and must keep the duplicates on file for not less than two years. If he wants a tube of heroin tablets or an ounce of cocaine solution for his office he must fill in one of the blanks, take an exact copy, and send the blank to the druggist, who must keep it on file for at least two years. Even then the physician cannot do as he pleases with the heroin tablets or the cocaine solution. Section 2-A of the act provides "that the physician may give or distribute any of the aforesaid drugs to a patient in the course of his professional practice only, provided that he keep a record, showing the amount of drugs dispensed, the date, the name and address of the patient to whom such drugs are dispensed or distributed, except such as may be dispensed or distributed to a patient upon whom he may personally attend, and such record

must be kept for a period of at least two years." This section is certainly ambiguous, and it is interesting to note the interpretation placed by the Division of Internal Revenue upon the term "personal attendance." I quote from Treasury Decisions March 11, 1915, as follows: "A physician must actually be absent from his office and in personal attendance upon a patient in order to come within the exemption of Sec. 2, Paragraph A of this Law. Only such drugs as are personally administered by a physician to a patient when away from his office are exempt from record, excepting that an oculist, aurist, or other specialist using minute quantities of drugs may keep a record of the day a stock solution was made and the day it was exhausted." This is not the interpretation which would be placed upon this section by most people, although it probably conforms closely to the intent of the act. However, it has all the force of law, and the physician must remember that he must keep a record of all such drugs dispensed, distributed or administered in his office, or left to be administered during his absence.

There seems to be a widespread belief that the new law restricts the liberty of the physician to order opium or coca preparations. There is absolutely nothing in the law which restricts the amount he may prescribe for a bona-fide patient, and there is nothing in the law which prevents him from using any of these drugs when he thinks it necessary, even if the patient be addicted to the habit-forming drug. He must remember, however, that this law does not set aside any state law, and that therefore the present state law prevails on this point.

A physician's prescription cannot be filled by the druggist unless it bears the patient's name and address, the date, the physician's address and registry number, and is signed by the physician with his full name. It has been ruled that the physician's signature must be such as would be used on a bank check or other legal paper. His surname alone will not do. It is assumed that the physician himself will fill in the name and address of the patient, as should a fictitious name and address be filled in by anyone else through any neglect on his part, he may be held responsible, and subjected to more or less inconvenience.

Prescriptions may not be refilled, but must be re-written each time, and an order on the druggist to refill "Prescription No. \_\_\_\_\_" is invalid, even though properly signed. On the other hand, a prescription for a private formula or proprietary preparation coming within the act may be filled even if the narcotic drug is not mentioned. Liniments or ointments containing opiates do not fall within the scope of the act if they contain sufficient other drugs to prevent them from being taken internally, but this does not apply to cocaine or to eye waters, ear drops, enema or injections. No special prescription is required in any mixture containing less than two grains of opium or one-quarter grain of morphine or one-eighth grain of heroin or one grain of codeine to the ounce. Thus a prescription one-half grain of codeine to a tablespoonful dose may be repeated indefinitely, but if it call

for five-grain capsules which contain 1/12 grain of codeine, the physician may rest assured that it will not be repeated without his written order. This is not consistent, but it is a feature of most of the state narcotic laws. There is one thing in this law which certainly will commend itself to the physician and reconcile him to its red-tape, and that is that he may now give a prescription for morphine, cocaine or heroin, knowing absolutely that it will be filled only once, and that it will not be refilled without his consent.

There has been some question as to the right of a nurse to carry narcotic drugs. It has been ruled that nurses cannot register, and therefore cannot have any narcotic drugs in their possession except under direction of the physician, and for use in a particular case. The physician will therefore order narcotic drugs which he desires a nurse to use only in such quantity as will be used on the particular patient under the nurse's care.

It is too early to predict whether or not this federal law will succeed where state laws have failed. Already attempts have been made to smuggle cocaine into this country, and it will require the combined vigilance of the Customs and Internal Revenue Departments to prevent this.

From carefully reading the regulations and from conversations with some of the officials of the Revenue Department, I feel certain that there will be no attempt on the part of anyone to harass the physician or in any way interfere with him in the legitimate pursuit of his profession. On the contrary, there seems to be a feeling on the part of the Government officials that the physicians generally will see the advantages to the public of this law, and will cheerfully co-operate in its enforcement.

## American Medical Association

MEETS

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COME!

## FUNCTIONAL DEFECTS OF THE THYROID IN RELATION TO NEUROTIC CONDITIONS.\*

By H. W. WRIGHT, M. D., San Francisco. (Report of Case.)

As time goes on the literature of the ductless glands increases to an astonishing degree. But exact and certain knowledge as to the functions of these glands and indications for treatment with extracts of them does not increase proportionately. With regard to the thyroid gland our knowledge has attained a more secure basis and when we have the totality of symptoms or even a few pronounced symptoms of Grave's disease, myxedema or cretinism to deal with we no longer need to feel in the dark either as to diagnosis or treatment. It is not with these clear cut entities that this article is concerned but rather with the more obscure symptom-complexes which appear to be the result of malfunction of the thyroid gland and especially with those symptoms referable to the effect of this malfunction upon the nervous system.

In any case of nervousness there is a multiplicity of causative factors and back of all a defective mental attitude toward life in general or toward the particular circumstances of life which happen to confront the individual patient. To say that the thyroid gland is responsible for such a host of symptoms as these neurotic patients suffer from would be absurd; to say that it is responsible for any of them would be hazardous if we did not have good reason to know that unhealthy emotions do surely affect the secretion of the gland, either causing excessive, diminished or perverted secretion. (Oppenheim.)

We also are justified from clinical experience as well as laboratory research in believing that the atrophy of the generative organs and the suprarenal glands incident to that period of life known as the presenile or involution period has an effect upon the secretion of the thyroid and that in some cases this effect is abnormal, i. e., that the thyroid either fails to atrophy synchronously and to a parallel degree with the gradual atrophy of the generative and suprarenal glands or that it hypo-secretes to an undue degree because of the changes in these structures, and thus there is a disturbance in the balance of secretion of all the ductless glands.

The influence of the female generative organs upon the thyroid is seen in pregnancy and the menstrual period at which times there is swelling and perverted secretion of the thyroid. Thyroid extract is now used in eclampsia with benefit; puerperal mania often resembles the delirium of Grave's disease. Atrophy of the ovary resulting from disease or from the menopause or removal of the ovaries results in neurotic symptoms which are characterized by instability of the vaso-motor system, local edema, headaches, lassitude, or unrest, vague neuritis pains, tachycardia and tremor, dry skin, pruritus, cold extremities, sudden giving way of muscular power when walking, etc., some of

which symptoms we know are significant of excessive thyroid secretion and some of an abnormally diminished thyroid secretion. In pure "neurasthenia," especially that which has begun late in life after the period of greatest activity and following emotional disturbances incident to the vagaries of fortune in captains of industry, or in those who have otherwise lived strenuously in professional or artistic fields of labor, we find frequently the following complex: a low blood pressure, an excitable pulse, periods of profuse perspiration at night, cold, clammy skin during the day, urticarial eruptions, neurotic edema of transient nature, alternate flushing and pallor of the facial blood vessels, hypo-tonicity of the intestinal muscles resulting in intestinal stasis, a great susceptibility to fatigue of all muscle function and of cerebral activity. Such symptoms have not been present during youth or early manhood in the majority of these patients; in some, however, we do get a history of previous attacks of "nervous breakdown" accompanied by some of the symptoms above mentioned, occurring at puberty and afterward, with an antecedent history of delicate health during infancy and childhood. These conditions may possibly be due to imperfect development of the thyroid.

The vaso-motor symptoms of neurasthenia just mentioned could not occur if the adrenal secretion were abundant nor could they occur if the thyroid secretion were not present in greater proportion in relation to the adrenal secretion and in greater proportion in relation to the testicular or ovarian secretion than occurs in normal health. There are also certain mental states, some of whose symptoms I feel can be explained upon the basis of defective function of the ductless glands and consequently upon hyper—hypo—or perverted secretion of the adrenal and hence of the thyroid; or to use a more comprehensive term, upon dysthyroidism (e. g., mania and melancholia and the mild dementia which accompanies arteriosclerosis, also dementia praecox). Sajous ascribes to the adrenal gland the function of a regulator of the secretion of all the other ductless glands by reason of the oxidizing and blood-pressure raising substance present in its secretion. Be that as it may the clinical pictures just described are consistent with a defect of the thyroid secretion.

The study of these conditions and the treatment of them is rendered especially difficult in most instances because of the fact that there are symptoms present in the same patient, relative to both hypo-secretion and hyper-secretion, and therefore to perverted secretion. Until further research has revealed to us just what chemical substances are lacking or too abundant in the secretion of the thyroid in these obscure forms of thyroid disease, we can only treat them experimentally and palliatively. But this lack of exact knowledge relative to therapeutic indications makes the problem still more interesting and it is incumbent upon us to examine every medical case with the idea of ascertaining the presence of symptoms referable to the malfunction of the glands of internal secretion, to

\* Read before the Santa Barbara County Medical Society, June 8, 1914.



compare notes and to standardize the results of our observations so as to have a working basis for further research.

The following patient illustrates some of the obscure and puzzling manifestations of partial myxedema and partial Grave's disease, cases of which have been reported by Elliott of Chicago (*Journal of A. M. A.*, May 30, 1908), Nichols of Washington (*Journal of A. M. A.*, April 10, 1909), Osborne of New Haven, and many writers in the German and French literature. The patient came under the writer's care on May 18th of this year with the following history, which is considerably condensed from that originally obtained:

The patient is a lady of 58 years, who has lived in Detroit most of her life. She was widowed and left with two sons when a young woman and had until a few years ago been obliged to work very hard as a teacher of music in order to give her boys an education as well as to maintain her living on the level to which she had been accustomed. She can be described as to mental make-up by saying that she is of a very sensitive, alert, ambitious and proud nature with "the artistic temperament," which has not suffered with patience many adversities affecting her emotions and many physical disorders affecting her health. About 11 years ago had acute appendicitis with abscess and prolonged convalescence during most of which she worked hard at her profession, keeping house at the same time, conducting a large musical conservatory and writing musical reviews. This resulted in a breakdown which was called acute nervous prostration and which was accompanied by pronounced cardiac weakness and rapidity of the heart's action. While taking a rest cure she developed acute gall-stone colic and was not operated on. In a few months went to work again very strenuously, but developed a disturbance of vision which was competently diagnosed as "acute glaucoma," and double iridectomy was performed. This operation and the fear of blindness was a great nervous shock to her, she says, and while recovering from it in a sanitarium she again had gall-stone colic, was put on the operating-table, but collapsed before operation could be performed and had to be resuscitated by artificial respiration. In three months was hard at work again and doing well, when she began to be depressed and easily fatigued, also restless and uneasy in mind, unable to concentrate and suffered from palpitation of the heart. She consulted a specialist on the thyroid. He pronounced her condition due to excessive thyroid secretion, and under family physician's observation she took a course of treatment with thyrodection. She improved, but was unable to take up work again and came to the Pacific Coast two years ago to recuperate. She went home after a year much improved, but in a few weeks began to complain of undue fatigue upon walking, especially that her knees would suddenly give way. She again became depressed and restless and very discouraged, once attempting suicide by taking 30 grains of veronal. She has been out on this coast again since the latter part of April, and for three weeks before I saw her. had been suffering from intermittent pain and redness of the left foot, especially when out of bed, which kept her awake at night. Together with this she had complained and still does of sudden giving out of muscular strength at the knees after a short walk, also of fleeting pains in the lower limbs of a neuritic type, insomnia and occasional cardiac palpitation after exertion, also she suffers a great deal from coldness of the hands and feet which is present even on warm dry days to some extent, but which is readily relieved by getting into bed with a hot

water bag. She is depressed to the verge of melancholia and has thoughts of suicide.

Examination shows a poorly nourished woman with pigmented skin under the lower eyelids and elsewhere, no visible thyroid, no tremor, heart action rather feeble, but regular and no constant rapidity and no murmurs; blood pressure low (110), and pulse about 80, blood pressure is readily raised by strong emotion; no apparent sclerosis of the artery. The skin and hair are very dry. The extremities are generally cold; the left foot at times presents the typical picture of erythromelalgia with purpuric spots along the course of the plantar nerves and marked pain on pressure here. The urine is normal. Enlargement of the veins of the neck and dull reddish patches on the face are occasional symptoms. Sudden asthenia frequent. Under administration of calcium lactate on the supposition of the thyroid's secretion being in excess, the parathyroid secretion being proportionately diminished and also because of its benefit in urticaria and angio-neurotic edema there was considerable improvement in the erythromelalgia and under aspirin treatment it was more promptly relieved. The patient is at present resting in hospital and undergoing treatment for insomnia and loss of appetite and for experimental therapy. To sum up we have a history of symptoms of excessive thyroid secretion, viz.: tachycardia, restlessness, and emotionalism, depression of spirits with anxiety and vasomotor instability combined with symptoms now present of diminished secretion such as muscular asthenia, dry skin and cold extremities and neuritic pains, which are not constant symptoms, however. Cardiac palpitation recurs frequently. Whether the erythromelalgia is a manifestation of thyroid excess or of diminished secretions cannot yet be determined. However, the thyroid may be said in this case to be working excessively at times and at times not secreting sufficiently but that the predominant condition is an excessive secretion. Or shall we say that other ductless glands, especially the ovarian and adrenal, are atrophied to such an extent that this has caused a modification in the thyroid secretion? The prognosis in this case should not be necessarily bad for as time goes on the excessive activity of the thyroid may be expected to subside and the patient's whole organism to become gradually adapted to the changes in the ductless glands incident to advancing age. Much, of course, will depend upon regulation of the patient's life, both physically and mentally; her emotional life especially will need proper safeguarding and satisfying channels for expression.

### SUCCESSFUL METHODS OF ATTACK ON MALARIA IN CALIFORNIA.

By PROFESSOR WILLIAM B. HERMS (University of California).

In spite of the fact that about thirty-five years have elapsed since Laveran discovered the causative organism of malaria in the red blood-cell of man, and about twenty-seven years since Ronald Ross and co-workers revealed the rôle that the *Anopheles* mosquito plays in its transmission, and notwithstanding the fact that malaria is now perhaps one of the best known diseases, there is still much left to be accomplished in its control. Furthermore, the ignorance and false notions of otherwise intelligent persons with regard to malaria is astonishing.

The average man adheres tenaciously to the long disproven notions that malaria is contracted by drinking "bad water," or by eating over-ripe fruit, or by breathing the air from swamps or newly turned soil, by over-exertion, etc.,—all of which

have, it is true, their proper bearing on the subject. Transmission by mosquitoes is commonly regarded as a vagary held by visionary scientists. There is little to wonder at, when it is known that there are still some physicians who hold just such views as above expressed.

The most effective measures for the control of malaria are based on a public knowledge of the cause and mode of transmission of the disease. A public ignorant of facts is difficult to work with. The facts relative to the etiology and epidemiology of malaria are so well in hand that this knowledge may safely be placed in the hands of the general public. Properly conducted newspaper publicity is a potent means of education, and editors and reporters should be given assistance in order that the matter may be correctly and wisely placed before the public through the columns of newspapers and magazines.

Popular illustrated articles as appeared from time to time in the Oroville (California) newspapers during the campaign in that community several years ago, did much to further the cause.

The economic importance of malaria needs to receive particular attention, and at all times facts before hazy generalizations. As has been well said, "It is the constant dropping of the water of publicity that wears away the stone of indifference."

The man engaged in malaria control operations must be essentially a teacher. Facts must be presented in a form that an average person can grasp, and this requires more than ordinary knowledge of the subject on the part of the informant, and some skill and tact in presenting this knowledge. The transmission of disease by insects in the simplest possible manner is mystery enough to an average intelligent person, and it must be borne in mind that the transmission of malaria by the Anopheles mosquito is a highly involved biological process. No wonder people are skeptical! The ignorance of intelligent citizens in matters of disease transmission in general is appalling to say the least. It is to be hoped that our schools and colleges are at work in this vastly practical age in turning out intelligent citizens.

The sooner the general public is made cognizant of the mysteries of the scientific laboratory, and the sooner the scientist desists from expressing himself in occult, mysterious terms, the sooner will the public come to understand the reasons for a given course of action in disease prevention and the sooner will his efforts bring results. Parenthetically it may be said that the dignity of the scientist will suffer little in the process. Even so, love and respect of fellow beings is much more to be preferred than a certain mysterious scholastic dignity so much coveted by certain individuals.

Perhaps no state in the Union has attempted to give its citizenship a better knowledge of insects and their relation to disease than has California. This has been accomplished mainly by means of the Agricultural Demonstration Train during the several years of its running in the state beginning with 1909. Half a car of exhibits under the heading of "Public Health" called at-

tention to certain important diseases, stressing methods of control and prevention. A demonstrator was always in attendance and the major attention was given to malaria. Practically all parts of the state reached by railroad were thus touched and the process repeated several years in succession. Much interest was thus aroused and the writer has been able to do much personal work and having seen the local conditions is thus enabled to render more practical assistance in offering wise recommendations.

Through newspaper publicity, lectures, exhibits and personal work it has been possible to establish six or seven organized campaigns against mosquitoes and malaria in various parts of the state as far south as Kern County and as far north as Tehama County, including Placer and Butte Counties.

The prevalent type of malaria in California is the *tertian* traceable to *Plasmodium vivax*; *aestivo-autumnal* malaria traceable to *Plasmodium praecox* occurs much less frequently; and the *quartan* type (*Plasmodium malariae*) has, as yet, not come to my notice.

Malaria is restricted to certain well defined areas in the state. That portion of the coastal counties bordering directly on the Pacific Ocean is free from endemic malaria,—this includes San Francisco and Los Angeles, the great metropolitan areas of the state. Malaria is virtually unknown south of Tehachapi.

The death rate for the United States due to malaria in 1910 was 4.8 per 100,000. Using that as a basis and determining the malaria death rate by counties it is not difficult to locate the points of greatest prevalence. The State Board of Health Reports provide statistics which show that the 1910 death rate for the Shasta-Tehama-Butte area was 46.8 per 100,000; the Placer-Sacramento-San Joaquin area was 20.4 per 100,000; the Fresno-Tulare-Kern area 8.9 per 100,000.

These nine counties out of the twenty-four in which malaria exists have about three-fourths of all the malaria. Twenty-eight counties are free from malaria. Collections of mosquitoes have been made in many of the counties all over the state and the distribution of Anopheline mosquitoes coincides with the distribution of malaria. As far as I have been able to secure specimens few or no Anophelines have been found in the counties free from malaria. The reason for this is either due to low average temperature, or the lack of proper breeding places. There seems no reason why Anopheline mosquitoes should not develop in the Imperial Valley, for example, now that ample water for breeding purposes is available. The introduction of Anopheline mosquitoes seems to be the only thing needed, if followed by the introduction of malaria cases, to establish the disease. This is the experience throughout the northern part of the state, i. e., with the introduction of irrigation there also follows malaria. That irrigation alone cannot be the cause is evidenced by the great amount of irrigation south of Tehachapi and the practical absence of malaria in that section. The introduction of malaria into

Placer County was traced to the building of the overland (Southern Pacific) railroad through that county. Previous to that time malaria was said to be unknown in that section. There seems every reason to believe that *Anopheles* mosquitoes existed there previous to that time and that these became infected through the Italian laborers employed in the construction of the railroad.

The Sierra foothills form an essentially healthful area, but for malaria, and it is interesting to note that absences from the public schools are largely due to this disease. In 1909 before malaria control work was begun the absences in a given school amounted to 124 days due to malaria, in 1910 when control work was being carried on in that district, absences due to malaria were reduced to 68 days, or a reduction of 45% in one season. In other districts malaria was as prevalent as before.

The following statistics, furnished the writer by the State Board of Health, give evidence of the success with which malaria is being combated in counties in which crusades have been inaugurated:

Table I.

Showing deaths from malaria in certain counties in which active organized malaria-mosquito campaigns have been waged. The educational value and example of the individual crusade upon the entire county must be taken into consideration.

	1909	1910	1911	1912	1913 *
Butte .....	17	15	11	8	6
Kern .....	4	7	2	1	2
Placer .....	5	3	7	1	3
Tehama .....	4	10	3	2	4

\* Incomplete returns.

The most vigorous crusades were conducted during the years 1911 and 1912, which is evidenced by the number of deaths shown for these years in Table I. During the latter part of 1912 and all of 1913 the campaigns were in the hands of the respective communities, all scientific assistance having been withdrawn owing to lack of funds to employ trained inspectors—the result is at once evident in the 1913 statistics.

The following table indicates the existing condition in certain malarial counties in which no organized systematic crusades have been conducted. The increase or maintained level in the number of deaths from year to year due to this disease is clearly shown. (See Table II.)

Table II.

	1909	1910	1911	1912	1913 *
Fresno .....	7	1	5	5	5
Kings .....	1	6	8	5	3
Merced .....	1	2	3	3	2
Sacramento .....	12	5	7	11	10
Tulare .....	2	2	6	4	4
Yolo .....	4	4	6	3	4

\* Incomplete returns.

While mortality does not represent the most satisfactory basis for malaria statistics, yet it is the only method at hand for general application until malaria cases are reported as is required by law. Locally, school statistics are very valuable, pro-

vided they are properly collected. Broadly speaking, it may be said that each death from malaria represents not less than fifty cases, perhaps nearer 100. There were a total of 112 deaths in California in 1909, 113 in 1910, and 121 in 1911. Thus for the whole State there has been no decrease of malaria, which means that malaria is decidedly on the increase in localities newly settled and in other localities not engaged in control measures. This must be inferred from the tables given above.

It should be noted at this point that California, taken as a whole, has less malaria (about 2% mortality) than has the registration area of the United States as a whole (4.8% per 100,000). This is due to the fact that a large part of California has no malaria while other sections, as noted above, have ten times as much as the average for the whole registration area of the United States.

As to school statistics two examples may be cited as follows: In the Penryn (Placer County) school already referred to above, the total number of absences due to malaria in 1909 was 124 and in 1910 only 68. In the former year no malaria crusade was in progress, while in the next year a fairly well organized campaign was in progress. This represents a reduction of 45%. In other schools located in districts near by where no attention was being paid to malaria control, no difference was noticed for the two years. Again in the Los Molinos (Tehama County) school in which a somewhat different basis for calculation was used, it was found that 75% of the school children were affected with malaria in 1910, and only 20% in 1911, and 17% in 1912.

In attacking the malaria problem in any given locality very careful personal attention is given to local conditions, relative to class of people involved, irrigation, drainage, subsoil, proximity to streams, etc. Recommendations made for one locality may not suit the case in some other locality. A preliminary survey made by a scientifically equipped field agent is absolutely essential. This survey can usually be made in a satisfactory manner in two or three days, and is then followed by an illustrated public lecture, well advertised. At this public meeting, usually among others, a number of lantern slides, showing conditions as they actually exist in that particular vicinity, are shown. Stress is placed upon the economic importance of malaria. For example, it can safely be estimated that a certain community of about 4,000 inhabitants, located in the northern Sacramento Valley, lost something over \$74,000 in the year 1911 because of malaria, as follows, druggist bills amounting to \$3,327; 500 cases under care of physicians, earning capacity and general efficiency of patients reduced by approximately 50%, involving loss to the employer as well as to the employee; seven deaths representing a definite economic loss; and considerable reduction in real estate valuation in addition.

Emphasis is furthermore placed on the presence of *Anopheline* mosquitoes, whether few or many, and that the distribution of malaria coincides geographically within the state with the presence of



Anopheline mosquitoes, mainly *Anopheles quadrimaculatus* and *Anopheles punctipennis*. Mosquito control is essentially the plan of action, and here great stress must be placed on the fact that the smaller apparently insignificant breeding places are of far greater importance than are those which are popularly looked upon as significant, namely, large reservoirs, great rivers and other conspicuous bodies of water.

A large proportion of the inland mosquito breeding places are traceable to faulty irrigation methods, particularly north of Tehachapi. In addition to irrigation the breeding of mosquitoes is greatly increased by the many little rivulets resulting from the melting snows of the Sierras, which water spreads out frequently over flat meadows, thus producing ideal situations for the breeding of *Anopheles* mosquitoes in particular.

Mosquitoes must have water in which to breed, either standing or slowly moving, it may be perfectly clear or it may be vile and filthy, or any intermediate condition. The trouble may be traceable to one or more of many conditions, among these, possibly a break in the ditch causing an inundation of two or three inches over an adjacent pasture, possibly a ditch clogged up with weeds and grass, possibly a leaking hydrant near the packing-house, or improper drainage after irrigation, perhaps a small settling barrel or tank for drinking water, a horse-trough, a can, tub, barrel, broken gourds, abandoned cesspool, etc. These seemingly minor matters are of greatest importance. Toward the latter part of the summer as the river or creek recedes, stagnant pools may be left by the receding water. Any unprotected water standing exposed to mosquitoes for ten days or over is a menace, because the minimum time required for a mosquito to develop from egg to winged insect is about ten days,—twelve days for *Anopheles*.

The writer illustrates all of the above conditions by means of lantern slides made from photographs of actual breeding places. The effect is very satisfactory.

California has relatively no more mosquitoes than have other semi-tropical states; indeed, we should naturally have fewer mosquitoes, and hence, less malaria, owing to our long dry summers.

Permanent methods of control are always preferably applied, namely: Keep the ditch in good order, do not over-irrigate, provide proper drainage, repair leaking hydrants, bury worthless objects which may hold water, cover or screen settling tanks, barrels, etc. Where possible, permanent bodies of water, for example, ornamental ponds, should be stocked with surface feeding fishes, such as gold fish, chubs, shiners, etc.

Where permanent corrections need to be delayed or are impossible, then oil or a larvicide must be applied to the surface of the water to destroy the mosquito wrigglers and tumblers.

If oil is used we recommend a mixture of approximately half crude oil and half kerosene, this can be easily applied by means of a knapsack spray pump, repeating the operation once every twelve days during the summer and somewhat less often

in early spring and late autumn. Treated stove oil at about 28° Beaumé is very useful.

It is usually the last brood of adult mosquitoes emerging in the autumn that goes into hibernation for the winter, reappearing in the spring, and is responsible for the early spring mosquitoes and the later new broods. These hibernating mosquitoes, at least for the most part, go into this state without having previously sucked blood. It is essential, to secure the greatest success, to eliminate the last brood during October and November by proper drainage or oiling. As a precaution it is highly desirable to inspect the territory under observation at least once or twice during the winter on warm days between rains in order to discover slowly growing wrigglers which may have been overlooked in the autumn.

The systematic campaign for the spring and summer season should begin not later than March first, though if the above precautions have not been exercised an inspection should be undertaken about the middle of February, and stagnant water oiled if found necessary.

Careful and systematic screening of dwellings and sleeping porches with 1 m.m. wire mesh screen is strongly urged. The use of oil of citronella as a repellent has been urged and put into practice by night laborers in certain localities. The destruction of mosquitoes which may have found their way into the house, particularly sleeping chambers, is, of course, strongly recommended. Thus far mere "swatting" has been practiced, no fumigation having been undertaken.

Quinine prophylaxis with minimum dosage is recommended for persons taking up residence in malarial localities. To prevent wholesale infection of mosquitoes in the absence of mosquito control measures, quinine treatment of the individual must be practiced. The writer is convinced that the usual quinine dosage is overdone, i. e., quite commonly this drug is taken in large doses daily for weeks and even months without the desired effect. Much may be said in favor of the "quinine schedule," beginning with heavier doses at the outset and gradually tapering off during a period of two or three weeks, followed by a period of minimum dosage. All too often the treatment ceases before the patient has been completely rid of the parasites, when prophylactic doses must continue if residence is retained in a malarial district.

Financing a malaria-mosquito campaign is quite naturally the chief difficulty. However, having aroused intelligent interest by means of newspaper publicity, lectures, demonstrations, etc., much less difficulty is experienced. Between \$5000 and \$6000 (not a large amount to be sure) has been expended in campaigns organized directly or indirectly by the writer specifically against malaria-bearing mosquitoes. This money has been collected by interested persons by subscription, donations in open meetings and by tag-days.

The cost of the campaigns has averaged from 40 cents a day per square mile of protection to 75 cents a day for the same protection, in other

words from about \$750 to about \$1400 per annum, with varying degrees of efficiency.

Our greatest need is financial assistance. The legislature of New Jersey, by an act approved April 20, 1906, appropriated a sum of money for purposes of general mosquito control, stating "provided that the aggregate sum appropriated for the purpose of this act shall not exceed three hundred and fifty thousand dollars."

A similar act in California, providing much less, would bring in return many times the original amount expended, through the stimulation of colonization alone in northern and central California. The readers of this article would be surprised to know how often the writer is requested on the part of prospective settlers to give information relative to the prevalence of malaria in certain parts of California and to state whether or not any effort is being made to control the same.

Several unsuccessful attempts have been made to pass legislative measures in this state. However, Tehama County has an exemplary ordinance directed against the *Anopheles* mosquito. A commendable feature about this ordinance is that it defines the term stagnant, viz., "The presence of the mosquito larva in said water shall be conclusive evidence that said water is stagnant," etc.

The several successful campaigns against malaria in California have shown how the attack can be made. We now need a larger, wider effort to drive the disease entirely outside the confines of the state, and this can be very largely accomplished in a relatively short time if systematic effort is put forth. As Californians we need not fear that this sort of publicity is poor advertising,—quite the contrary, any state will admit that it has mosquitoes and all will give highest praise to the state which frankly recognizes this defect and applies the means at hand to eliminate it. California has a decided natural advantage due to its largely semi-arid climate.

As a public health movement malaria control deserves the whole-hearted backing of the medical fraternity.

#### DRUG ANAPHYLAXIS: AN ILLUSTRATIVE CASE?\*

By A. J. SCOTT, JR., M. D., Los Angeles.

The literature of today contains many references and many articles on anaphylaxis. Dorland<sup>1</sup> defines it as: "The state of excessive susceptibility to the action of a toxin or a drug which sometimes follows infection or continued administration of the drug. Called also Theobald Smith phenomenon and hypersusceptibility."

Armond Deville<sup>2</sup>: "There exists a certain number of organic substances which introduced for the first time into the organism, in innocuous doses, have the property of producing in the organism, after a fixed period of incubation, anaphylaxis, that is, an extreme sensitiveness to minimum doses of the same substance which produce no trouble in an organism not so treated. This anaphy-

lactic condition appears to be connected with the development in the organism of a body, or a special property which exists, amongst others, in the serum of the blood since by introduction of this serum into another individual of the same species, this person is immediately plunged into a state of anaphylaxis."

Almost all experimental work and clinical observations have had to do with sera and serum reactions. A search of the literature reveals a scarcity of any article or case reports covering drug anaphylaxis.

F. Silvestri<sup>3</sup> observed cases of anaphylactic poisoning from various drugs, among which morphine is mentioned. He considers idiosyncrasy and true anaphylaxis one and the same thing, forming virulent and promptly acting poison out of proportion to the dosage.

The cause of death in true serum anaphylaxis is a stenosis of the pulmonary air passages. The period of time from the primary injections to the manifestations of symptoms of poisoning varies from six to twelve days after the second injection. Whether the same be true for drugs or not, is not known as we have no animal experiments to show.

Take the drug morphine, which is so often used in the treatment of spasmodic or bronchial asthma. The average lethal dose cannot be definitely determined, for what will be an ordinary dose for one individual, may be toxic for another.

Emerson<sup>4</sup> states: "In adults, not addicted to the drug, one to three grains will cause symptoms, often death. \* \* \* Fatal results have occurred even after the subcutaneous injection of  $\frac{1}{4}$  grain. People exhibit various degrees of susceptibility to the action of opium, so that it is impossible to say definitely what a fatal dose will be. Idiosyncrasy plays a large role in modifying the usual effects of opium, and may be of importance in medico-legal investigation \* \* \* Some diseases render the system very susceptible to its action."

Bronchial asthma per se, has a close relation to anaphylaxis, in its response in many persons to emanations from horses, its relation to hay-fever, etc., and is not considered here for the reason that it was not the cause of death, and the post-mortem findings showed nothing of particular value with reference to the cause of the asthmatic attacks. But the particular action of the drugs, the smallness of the lethal dose, the period of time over which it was given, the history of having been a morphine habitue in the past, leads us to consider this case as possibly one of drug anaphylaxis. Those who are frequently associated with morphine habitues tell of persons who, having been free from the drug for various periods of time, have often experienced marked toxic symptoms upon renewing the drug, even in very small doses, sometimes sudden death occurs.

In this connection, the following case is reported, hoping that it may be of slight value.

Unfortunately no serum tests were made, but the clinical symptoms lead us to the diagnosis, as well as the history of the case.

On Friday, May 22, 1914, at 8:40 A. M., was

\* Read before Los Angeles County Medical Society, January 7, 1915.

called to J. E. stating the trouble was spasmodic asthma. Getting there about 8:50 found a fairly healthy young woman with labored breathing and coughing in an attack of asthma. Tried to examine her heart but the rales in the chest overcame all sounds, except the first tone at the apex.

On questioning, she had been given doses of adrenalin hypodermically during the night by the husband, dosage ranging according to their statement from two to ten drops at a dose. Gave her fifteen drops of 1 to 1000 solution of adrenalin by dissolving of 3/200 grain tablet of adrenalin in 25 drops of water, at 9:00 A. M. After waiting 10 minutes, and getting no effect from this whatever, gave her a tablet containing 1/20 grain morphine nitrate, 1/50 grain nitro glycerine, 1/50 grain strychnia, together with 1/4 grain tablet morphine sulphate plain, hypodermically. At 9:40 no relief, so gave another 1/4 grain morphine with 1/150 of atropine, with fifteen drops of adrenalin solution that they had on hand. This made 11/20 of a grain of morphine that she had had in a half hour.

Stayed with the patient until a little after 10:00 o'clock. About 10:15 she had a good pulse, respirations were easy, pupils normal, was conscious and apparently in very good condition. Left four 1/4 grain hypo tablets of morphine sulphate plain, with instructions to use one at a time guarded with 15 minims adrenalin not oftener than every two hours, but not to use except during a severe paroxysm and not to start before evening.

Past History: She had been in the habit in past years to take morphine for the relief of her attacks of asthma, but had, according to her statement, taken none for two years. During this interval she had used the adrenalin solution with a hypodermic upon the advice of some physician. Two years ago she had been given, so they said, four grains of morphine in broken doses, before relief was obtained from a severe paroxysm. She was in a hospital at the time and on account of symptoms of morphinism had been given appropriate and successful treatment at once. They said she had had no morphine up to the time that I had administered it on this morning.

At 4:45 P. M. the husband telephoned that the wife had been asleep for over an hour. Upon asking if it were a normal sleep, he responded that it was, apparently. He stated that at 2:00 P. M. he had given her one of the 1/4 grain tablets that had been left and getting no result had repeated it at 2:30 upon her request. He said she vomited after the second dose and her bowels had moved with an enema. Asked him what the condition of her pupils was, and he replied, after examination, that they were pin-point, also that he was unable to rouse her by repeated shaking. Told him I would get there as soon as possible, but being delayed phoned him again and receiving the reply that she was in the same state, told him to make some strong black coffee and give to her if he could get her to swallow. Reached the house at 5:20, found her reclining in a chair, unconscious, pupils about one to two millimeters in diameter, slow, Cheyne-Stokes respiration, lips a peculiar brownish hue, face slightly flushed, pulse about 100—weak, easily compressed, but regular. One one-hundredth grain atropine was administered at once hypodermically, and an attempt made to wash the stomach, which was unsuccessful, on account of the tube being too soft.

The husband was informed that his wife was in a critical condition and that we might not be able to resuscitate her, phoned for an ambulance at 5:30 and got her into the receiving hospital by 5:45. She apparently died on the road to the hospital, although we had given the attendant some aromatic spirits of ammonia to hold to the nostrils on the trip.

At the hospital, artificial respiration by the Sylvester method and 1/50 grain of atropine administered. She gave one or two gasps while on

the table, although we could get no heart tones at all.

Autopsy held by Dr. Wagner, autopsy surgeon, the following day, showed: Throat negative so far as any abnormality. Chest: Lungs emphysematous with some thin bloody fluid. Heart absolutely normal. Abdomen: Stomach slightly injected mucosa. Intestines: Liver, spleen, kidneys, negative. Right ovary cystic, size large hen's egg. Left ovary beginning cystic degeneration. Uterus small, normal. The skin had a mottled reddish hue and on the arms were numerous old and new hypo pricks.

Diagnosis, overdose of morphine administered accidentally. COMMENTS: This case presents some rather interesting questions; first was there any idiosyncrasy for morphine on that particular date, or was the system so exhausted from the prolonged and labored efforts at breathing, that the morphine had a particularly toxic effect, or anaphylaxis.

With the history of having been a morphine habitue in the past and free from morphine for two years, could the dose of one grain of morphine at that particular time and in that particular individual have been more highly toxic than at any other time: again anaphylaxis.

She had all told 21/20 grains of morphine in a period of six hours as well as 1/150 grain of atropine.

From the foregoing, it is essential that a comparison be made between the manner of death from morphine and anaphylaxis. In anaphylaxis death, (serum anaphylaxis being considered, as we have no symptoms of drug anaphylaxis with death,) quoting from the experimental work of Auer and Lewis on guinea pigs, the respiratory movements cease before the heart stops beating, by several minutes. There is also a paralysis of the skeletal motor muscles, consciousness usually present to end. Autopsy findings in chest show lungs in a distended state, rather dry, and somewhat similar to emphysema. This latter condition according to Auer and Lewis<sup>5</sup>: "forms the anatomical basis for the explanation of immediate anaphylactic death, and that this asphyxia is produced by a stenosis of the pulmonary air passages." It is agreed by most observers that death is due to some disturbance in the medullary centers.

On the other hand, true acute morphine poisoning results according to Emerson<sup>4</sup>, Butler<sup>6</sup> and others "from true respiratory failure, the asphyxia being closely accompanied by cessation of the heart's action." There is cyanosis, contracted pupils, drowsiness, deepening into coma from which the patient cannot be roused, relaxation of the muscular system and abolition of the reflexes.

We have undoubtedly a case of true morphine poisoning, but the history, and the present attack taken together, leads us to consider seriously the possibility of drug anaphylaxis.

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# REPORT OF THREE YEARS' RECTAL WORK AT THE COUNTY HOSPITAL.\*

By W. H. KIGER, M. D., Los Angeles.  
Visiting Surgeon, Rectal Ward, Los Angeles County Hospital.

My object in writing this paper for your consideration is twofold; first, to invite your attention to the frequency of rectal and colonic diseases; and second, to compare the different methods of operating for said diseases. I have taken from my books and tabulated a list that you may see the frequency with which each disease occurs. All writers on this subject agree that hemorrhoids heads the list. Permit me to say in this connection that much confusion might arise here for the reason that the patient's word is often taken and he invariably calls any, and all, affections in the region of the anal canal or rectum, *piles*, when in truth his opinion is far from being correct. May I also suggest that the doctor in the case frequently falls into error either by taking the patient's word for it, or that he fails to make a thorough examination or perhaps never having given any special study to these diseases, is not prepared to make a positive diagnosis. No one will gainsay but that the diseased conditions found in the rectum and colon are of just as much importance as when disease is found in any other portion of the anatomy. Either one or the other, rectum or colon, is frequently the seat of enough pathologic change as to render life unbearable or endanger life. Let me cite in evidence: Cancer, tubercular ulceration, close strictures of the gut, destructive fistulae, dangerous hemorrhage, and may I add, pruritus and fissure, one the most tormenting, the other the most painful of all affections of the body. I do not include hemorrhoids although many appear to think that they embrace about the only disease found in this region that calls for surgery. And there be those that harken to the charlatan, and argue that ointments are quite sufficient for the cure of "piles." I submit my report which is as follows:

## OPERATIONS.

Hemorrhoids .....	267
Fistulae .....	116
Abscesses .....	44
Strictures .....	21
Irritable ulcers and Fissures....	24
Benign Tumors.....	10
Tubercular ulcers.....	19
Prolapse .....	8
Cancers .....	6
Pruritus Ani.....	6
Impacted Feces.....	2

Total .....523

As my work at the clinic ward is limited to surgery no "treatment" cases are reported. I will not attempt to individualize these cases for to do so would make this paper too long, but will rather content myself with dealing with them as a whole and dwell more upon the methods of operating, looking to their cure and submitting comparisons. First, let me call your attention to the frequency

with which these diseases occur, which I believe will be found about the same by all surgeons doing rectal work, yet I have heard it discussed, whether hemorrhoids or fistula should receive first place. In my records, hemorrhoids so outstrip fistula in the race of frequency that the latter could not be considered a good running mate, although it does come second in the list.

## HEMORRHOIDS.

It is not my intention, as has been intimated, to discuss the etiology of these diseases in this paper but only to deal with them in an operative way. For the relief of hemorrhoids many operations have been devised. The two most used are the ligature and the clamp and cautery. The elder Allingham up to the time of his death, a few years ago, and after doing thousands of operations pronounced the ligature "the best, safest and quickest done" of all operations for hemorrhoids. I have used both methods frequently and although many consider the ligature as obsolete, and nonsurgical, the reasons given, viz: "that it invites sepsis, and that it is the most painful" do not hold good in my work or in the opinion of others who do proctologic work. Allingham counts sepsis as *nil* after ligature operations, and Mathews after thirty-five years in this special line reports that he never saw sepsis result after an operation for hemorrhoids by ligature. (He refers to one death from tetanus in his book.) It stands very favorably with the clamp and cautery method, at least so in my work. You will notice in the list that I have done in the three years in the County Hospital two hundred and sixty-seven operations for hemorrhoids. I have not limited myself to any one of the different advised operations. Indeed there are quite a number suggested. Allingham ligated after making a deep cut at the sulcus or white line leaving the tumor hanging as an isthmus, cutting it off close to the ligature. Mathews did this operation for a number of years, then changed the method to simply cutting through the skin, thereby, he claims, avoiding all hemorrhage. Earle, with a special clamp catches the tumor at its base, cuts it off and sutures around the instrument. Van Buren transfixed the tumor by passing a large threaded needle through the center of the pile and tying tightly on either side. Pennington excises the tumor, Gant does much of his work under local anesthesia. Almost all others confine themselves to the clamp and cautery. I prefer the plan suggested by Mathews with the addition of a subcutaneous stitch around the cut edge of the skin with the same ligature as suggested by Ball. I think it lessens the pain and shortens convalescence.

## FISTULA IN ANO.

Permit me to say that "Fistula in Ano" though used by all authors, is a misnomer. Fistula in this region deals much more with the rectum and its tissues than with the anus. In the three years' service I have operated one hundred and seventeen times for anal or rectal fistulas. In a word, the operation consists in ferreting out each and all sinuses and dissecting them out. In doing this, very often much tissue must be sacrificed. This is the one disease that requires much cutting if a

\* Read before the Los Angeles County Medical Society.

cure is expected. Better by far to do too much than too little. I never fail to sever the sphincter muscle when necessary. It must not be forgotten too that its action during and following defecation prevents the healing process. Being both a voluntary and involuntary muscle it can be in action at any time; no fear should be entertained that incontinence will follow save in the tubercular patient or where the muscle has been injured by traumatism. The patient is allowed to get out of bed and walk much sooner than it takes the wound to heal; this course aids, rather than prevents, the healing process.

#### ABSCESS.

Strange to say that during the three years I have opened but forty-four rectal abscesses. Recognizing that all fistulas begin with an abscess and that when these are opened in the early stage the fistula is often prevented, this small number can be accounted for by reason of the fact that the patient does not know of the importance of having the trouble attended early and, too, they are often advised by the physician to wait and allow it to "burst." I would rather open the supposed abscess and find only inflammatory tissue, than to allow a pus formation to go a single day without opening.

#### STRICTURE.

I have operated on twenty-one cases of stricture of the rectum in these three years. You will agree with me I am sure when I say that a stricture of the gut in any locality is a very serious condition. If they are within reach they should be removed by making a dissection of the gut or a posterior linear proctotomy with complete division of external parts. Some practice gradual or forcible dilatation. I have used all of these methods and prefer the first two mentioned. If for any reason it is thought not advisable to operate for the stricture per se then a colostomy should be done. I have had only three cases when I thought this necessary, two of the strictures being the result of malignant disease and the other of syphilitic infection.

#### IRRITABLE ULCER AND FISSURE

I have listed irritable ulcer, and fissure under the same heading, although they are not the same by any means. A fissure is simply a break or crack in the mucus membrane at the anal outlet. An irritable ulcer is just what the name implies: an ulcer irritated. The surgery required to cure a fissure is very simple; a cut through it and the edges trimmed will effect a cure. In many cases a full dilatation of the muscle is all that is required. An irritable ulcer requires much more than this—full dilatation of the muscle, a curettage of the ulcer, trimming of the edges and many applications afterward. An ulcer in the rectum should be looked upon with suspicion for tuberculosis is often the cause of this condition.

#### TUBERCULOUS ULCERATION.

And this leads me to consider ulcers that are of tuberculous origin, of these I have seen and treated surgically nineteen cases. If they required any surgery I never hesitated to use it, such as trimming off infected edges, cauterization of the ulcer,

etc. One precaution should always be observed in dealing with these cases; namely, be careful in dilating the muscle. The wounds will heal if properly cared for. It would be a pity to leave these cases uncared for, under the mistaken idea that surgery would do no good.

#### PROLAPSE.

The rectum often prolapses either in the infant, middle, or old age, in size from a very small tumor to one of immense proportions. No treatment outside of surgery does any good for a pronounced case of prolapsus except in the infant when strapping the buttocks will effect a cure. The suggestion of Van Buren, to draw six lines down over the mucous surface of the rectum with the actual cautery has been proven inefficient by all operators. The two accepted operations for the trouble are amputation, and colopexy as devised by Mathews. The latter operation consists in opening the abdomen in the median line, drawing the gut out *taut* and suturing to the abdominal wall. I have done this operation in two cases with very satisfactory results. I have amputated the prolapsed gut several times with a favorable result.

#### BENIGN TUMOR.

Under the head of benign tumor I include polyps. All such I have removed by ligating at the base and cutting away the tumor if of any size.

#### PRURITUS ANI.

It is believed by many of our leading proctologists that this troublesome affection should be treated in a surgical way. Mathews does a careful dissection of the itching area made to include the lower inch of the rectum. Hanes removes only the lower inch and claims that this effects the cure. Ball makes a curved incision on each side of the affected area. The flaps are dissected up to the anal canal above the muco-cutaneous junction. And thus all the cutaneous nerves are severed. After bleeding is stopped the flaps are returned in place. The danger that I see in this operation is that after severing the nerve distribution in buttock you might have death of tissue result. In my service I have been content to remove the lower inch only. I believe with those who classify this disease as one requiring surgery, as all other treatment is generally futile, except in very mild cases.

#### CANCER.

It is a well recognized fact that the rectum is a favored seat for cancer and if seen in its earlier stages is often cured by surgery. Whole volumes could be written concerning the different operations that are proposed for its removal. Every one who has removed the complete rectum for a malignancy will confess I am sure that the operation is one of the major if not *the* major operation in surgery. I have operated six times for a malignant rectum, four are living, one died following the operation, one had a recurrence in the liver in three months. Dr. Cooke kindly operated at my clinic on one case of this kind. Percy has devised a procedure to be used in the advanced cases of cancer, which consists in the application of modified

heat by cautery. In some cases his results have been marvelous. He emphasizes that it is not the cancer that kills the patient, but the sepsis it causes. He believes that his heat application suspends this action.

## SEX.

This report covers operations on males four hundred and five, females, one hundred and seventeen, showing a great preponderance of rectal diseases in the male.

## ANESTHETICS USED.

Spinal .....	317
Ether .....	117
Gas .....	3
Local .....	86
Total .....	523

You will observe that I have used spinal anesthesia principally in my rectal work and I regard it as an ideal anesthetic in such work. I know that this method has been decried by many operators but I must believe that it was not given a fair trial in their hands. I have never lost a case that could be attributed to its use nor have I had any unpleasant experiences so I shall still continue to use it. As all of this work has been done in the wards of a public hospital it has been impossible to collect data as to results.

## Discussion.

Dr. Whitman: For more than three years past, all cases of rectal pathology coming to the County Hospital, have been referred to Dr. Kiger. The list of cases presented by him here tonight is compiled from the hospital records of cases operated by him, and is therefore correct. The results of operations have been uniformly good. I have seen Dr. Kiger operate, and I am very favorably impressed with his technic, especially his modifications of the Mathews method, where he stitches the skin and mucosa. This seems to me to give a better result than any other procedure with which I am familiar. You have had the pleasure tonight of listening to an address by Prof. Joseph Mathews of Louisville, who is one of the most distinguished members of our fraternity. I am proud to say that I have known Dr. Mathews for more than a quarter of a century.

Dr. A. B. Cooke: The paper we have just heard read is a particularly admirable one because of its practical nature. I have had the pleasure of visiting Dr. Kiger's clinic a number of times at the County Hospital and I regard it one of the best rectal clinics if not the best of which I have any knowledge.

Many points in the paper would bear discussion did time permit. I shall refer to only one. Dr. Kiger seems to give the weight of his endorsement to the ligature operation for internal hemorrhoids. Performed as they generally are in Dr. Kiger's clinic under spinal anesthesia there is some show of reason for this preference. But as contrasted to the clamp and cautery operation there can be no doubt of the great superiority of the latter. The ligature operation has many defects which can be summed up in the statement that it is an unsurgical procedure. Whatever technic is employed when the base of the tumor is strangulated by ligation there is nothing for it to do but slough. This results in leaving a raw, open, ulcerating surface which invites sepsis. Again we all know that one of the most painful things that can happen in surgery is the compression of sensory nerve filaments with a ligature, thus inviting if not insuring post operative pain. On

the contrary, the wound left by the clamp and cautery is aseptic from the beginning, repair is much more prompt, and if the technic is correct the post-operative discomfort is very much lessened. The above comments are made notwithstanding the presence of my very good friend Dr. Mathews. What he will say I know in advance for I have heard it many times. But I am sure it will prove interesting to the audience. I am very glad indeed Dr. Kiger read this paper tonight that the profession of the city may have some knowledge of the good work going on over at our splendid County Hospital.

J. M. Mathews (by invitation). The one thing that has interested me most in this most excellent report of Doctor Kiger's is the fact that he has so large a clinic on this special disease. I speak advisedly when I say that it is the largest and best clinic of its kind to be found anywhere in the United States. The County Hospital, under its splendid management, should be congratulated for providing such rare conditions for patients afflicted with this special class of diseases so much neglected by the general profession.

The next thing that attracted me was the anesthetic that he uses. I must confess that I have never used spinal anesthesia, because I feared it. I must have gotten my impressions from some adverse criticisms in the medical press. I can quite understand now that anything opposed to this method arose during its earlier use, when cocaine was the agent used. I would have no further fear after hearing this report.

I am glad that the doctor has mentioned the use of the ligature in operating for hemorrhoids and commends it. Much has been written and talked in opposition to its use. My friend Dr. Cooke has just now in discussion of the paper given several reasons why he opposes its use. Like many who write and talk against it, I fear that the doctor started off in the treatment of hemorrhoids by using the clamp and cautery, which no doubt has served him well, and was prejudiced against the ligature, and has never given it a fair trial. I say this because, after using it for over thirty years, I can safely affirm that one and all of the reasons he gives for not using it are purely chimerical. In all my long experience I have never had a single case of sepsis follow, nor an abscess result. Nor have I ever had an ulcer supervene. The elder Allingham said to me once in St. Mark's Hospital that his experience was similar, after operating thousands of times for this trouble by the ligature. Indeed, he used no other method. So if real facts amount to anything, Doctor Cooke's objections go to naught.

I too regret that Doctor Kiger did not go into the etiology of these diseases, but I can quite understand that it was not in the limits of his paper. He is to be congratulated in presenting to this society so practical a paper.

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## A CONSIDERATION OF THE RELATIVE MERITS OF THE ALBEE OPERATION AND THE HIBBS OPERATION.

By ETHAN H. SMITH, M.D., San Francisco.

The question of whether we shall do an Albee operation or a Hibbs operation in a given case of tuberculosis of the spine, is one about which much has been said and written. Having had experience with both operations in a number of cases, and also having seen the work of Dr. R. W. Lovett and Dr. Augustus Thorndike at the Children's Hospital in Boston, the writer would like to endorse the conclusions of these gentlemen, as it seemed to them to have worked out up to a year ago.

The Albee operation is not advisable in very young subjects, say under five years of age, as the long bones are so fetal in character that the transplant from the tibia will bend after having been placed in the spine and the kyphosis will increase. While in the Hibbs operation, the callus which is thrown out as a result of raising the periosteum from the laminae and spinous processes and the folding down of the spinous processes is soft, yet it is so voluminous that it will support the spine very much better than is the case in the Albee operation.

Experience with both operations tends more and more to prove this to be the case. The older the patient, up to adult life, the more applicable is the Albee operation. It is doubtful if the Hibbs operation should be considered after the 15th year. The callus which is thrown out after a Hibbs operation in any patient near adult life is so slight in comparison with that in young children that it is not sufficient to support the spine for a number of weeks after it is done; it does not relieve the pain in cases where pain is a prominent symptom; and the disease tends to progress almost unhindered, this in spite of the fact that the patient may be placed on a stretcher frame or in some supporting apparatus, plaster of paris or otherwise. With the Albee operation, pain due to the disease, and not attributable to the necessary trauma of the operation, usually ceases within the first twenty-four hours after the operation is done and all symptoms are ameliorated. The splint will amalgamate with the spinous processes and laminae, if properly applied, so as to give much greater support than can be obtained by the Hibbs operation.

The Albee operation offers another advantage over the Hibbs operation in cases where the disease has involved one side of the spine to a greater extent than the opposite side: that is, in those cases in which the disease begins laterally in the vertebral bodies rather than anteriorly. The transplanted splint can be placed on the side of the concavity of the deformity, so as to overcome the tendency to lateral distortion with less strain on the splint than if placed on the opposite side of the spinous processes. This is one of many little details that must always be taken into consideration in doing an Albee operation. A chisel,

or osteotome, beveled on both sides and drawn down to a keen edge, and kept just as sharp as a carpenter's chisel, should be used. Great care should be taken in chiseling the spinous processes not to pound too hard with the mallet, as heavy pounding may very markedly disturb the patient's pulse and respiration and increase the tendency to surgical shock afterward. The chisel should have a keen enough edge to be driven down with slight tapping of the mallet, thus obviating any unnecessarily rough handling of the spine.

The patient must be carefully inspected to see whether or not there is lateral deviation of the spine and the splint placed on the side showing a lateral concavity. The spinous processes must not only be stripped down or denuded so as to thoroughly eliminate any possibility of interposition of periosteum or other soft matter, but the periosteum must be lifted away from the laminae and the splint placed snugly in the angle between the laminae and the spinous processes.

The sutures must be passed through the base of the spinous processes and not merely through the soft parts.

There is no advantage whatsoever in attempting to put in two splints in what has been termed a "double Albee" operation. It is a waste of time, and an unnecessary and harmful sacrifice of the spinous processes which may result in defeat of the whole operation. One well-shaped transplant sawed, not chiseled, from the tibia, thoroughly settled down into a seat properly prepared in the spine and securely sutured in place, is all that is necessary. The second splint on the opposite side cannot be properly sutured in place without jeopardizing the integrity of the spinous processes and disturbing the first splint applied, nor can they both be simultaneously applied in a satisfactory manner.

In the lumbar region it is difficult to split the spinous processes as the tip is frequently large and bulbous in shape with a narrow neck which might break if serious attempt were made to split it. If it is thoroughly denuded of its periosteum the purpose is accomplished.

The splint should be shaped with a saw and all scoring, so far as possible, avoided, as it weakens the splint. By a little maneuvering, a large graft can be sawed out from the upper part of the anterior face of the tibia and so shaped as to fit accurately into the deformed spine. Chiseling out splints needlessly cracks the bone, batters the splint and the tibia, produces unnecessary and harmful trauma, and is a most slovenly way of attempting to do the operation. All bone transplants for use in the spine or long bones should be sawed in any case. By using a metal guide to get an outline of the splint to be fitted, it can be marked out on the surface of the tibia and sawed to fit accurately. It comes out easily without serious damage to the tibia, saves time, and is a neat and workmanlike way of doing the operation.

Dr. Albee is certainly right in not using plaster of paris jackets or other supports in the operation advised by him. These patients do better when

permitted to go without other support than that afforded by the properly applied graft in the spine. They should be placed face downward on pillows or a properly prepared bed until the wound over the spine is sufficiently sound to have all sutures removed.

After the Hibbs operation support to the spine is necessary, or it will be so disturbed as to interfere seriously with the result.

Great care must be exercised in handling these patients, and in removing them from the operating room to the bed, not to thoroughly wreck all the work done at operation.

Patients that are very weak and anemic should under no circumstances be operated upon until an effort has been made to build them up so as to endure both the anesthetic and the operation. The application of the principles of Crile's anoci association should be always observed.

The patient with abscesses, from which pus can contaminate the wound and gain access to the transplanted bone in the spine, should seldom be operated upon until the sinuses have healed and the pus can be excluded.

Cases where a tubercular deposit is connected with the spinous processes, where pus may not have formed, but where tubercular tissue might break down and cause pus, form a problem which must occasionally be dealt with. If the tubercular deposit is dissected out first and the wound permitted to heal before attempting an Albee operation, it may heal only temporarily and we may have a larger tubercular abscess to deal with than if it had not been touched. If we dissect out a mass of tubercular tissue and place in a transplant, we may get a union of the bone to the spine, and then have half of the transplant destroyed later on by tubercular disease. A tubercular sac over a spinous process, especially in cases which have been long on a stretcher frame or have been roughly handled by osteopathic therapy, is not an unknown experience; it affords a grave problem in considering an Albee or a Hibbs operation.

Where there is any liability of the end of the bone transplant becoming loose before union takes place between the transplant and the spinous process, a silver wire suture is an excellent thing. The suggestion of silver wire is not original with the writer.

The earlier tuberculosis of the spine is discovered and operated upon by one or other of the methods above mentioned, the more ideal will be the results. All physicians, no matter what their line of practice may be, should use their best endeavors to have parents, or those having children in charge, take the children occasionally to the family physician. The child should be stripped and its body carefully scrutinized for any possible disease or deformity. This is quite as necessary as taking a child to the dentist to have the teeth inspected and make sure there is no source of disease lurking in the mouth. Parents should not be taught to attempt to diagnose conditions for themselves, but they should be taught to take their children regularly and frequently to have a thorough examination. The proneness of many prac-

titioners to ask a few questions and write a prescription, without stripping a patient even when the patient comes complaining of symptoms that ought to arouse suspicion of disease of the bones or joints, accounts for many of the diagnoses ticketed "rheumatism." Rheumatism is getting to be almost as disgraceful a cloak for ignorance as its predecessor "scrofula."

Cases of tuberculosis of the cervical spine should not be operated upon by either the Hibbs or the Albee method. Infants can be better treated by the wire cuirass or a properly applied plaster of paris cradle. Older children thrive very much better and get well very quickly and very successfully by the proper application of a plaster of paris jacket and jury mast as used by the late Lewis A. Sayre. These children can play about in the open air so happily and so comfortably with a proper jacket and jury mast and get well so quickly as compared to cases where the disease is lower down in the spine, that there is no necessity to disturb them by an operation which, because of the anatomical peculiarities of the vertebrae and the possibility of injuring the very soft structures, is likely to fail or worse.

Of course, an operation might be advisable in a case in the lower cervical region which laps over into the dorsal region. But in purely cervical cases, or in high cervical cases, an operation should not be attempted.

I wish to emphasize that I have said a *proper* plaster of paris jacket. Plaster of paris bandages wound about the patient's body in an indifferent manner are not a *proper* jacket.

We would here like to mention the colitis that frequently accompanies tubercular disease of the spine and hips. Frequently after an Albee or a Hibbs operation more pain is complained of from cramping of the bowels than from the operation. Much stringy mucus will be passed and until the bowel is relieved of this the patient will be very uncomfortable. An emulsion of kerosene 1 oz., olive oil 6 oz., allowed to flow gently into the bowel with low rectal tube, seems more efficient than anything else in clearing up the colitis as well as relieving the pain. The quantity given above is for an adult.

#### A WATER-BORNE TYPHOID FEVER EPIDEMIC.\*

By WILBUR A. SAWYER, M. D., Director of the Hygienic Laboratory of the California State Board of Health.

The city of Healdsburg in Sonoma County, California, was almost entirely free from typhoid fever for a number of years prior to the summer of 1914. Between July 15 and September 22 of that year the city was visited by an epidemic of typhoid fever consisting of ninety reported cases and seven deaths.

Eighty of the persons affected resided in Healdsburg, and eight on near-by farms. One lived in Oakland, and one in Petaluma. All received their infection in Healdsburg. How many travelers

\* Read before the Alameda County Medical Association, April 20, 1915.

contracted the disease and became sick in distant cities is a matter of conjecture.

As there were seven deaths among the ninety cases recognized as a part of this epidemic, the mortality was 7.8%. One of the deaths occurred on a farm near Healdsburg. The Oakland patient died in a San Francisco hospital. The five other deaths occurred among the eighty residing in Healdsburg.

Healdsburg has an estimated population of 2100 persons. Excluding from consideration the incomplete reports of cases outside the city, we have the following statistics for the eighty cases (including five deaths) among residents of the city.

The cases were 3.8% of the population, or in the ratio of 3810 per 100,000 people. The deaths were 0.24% of the population, or 238 per 100,000 people. The case mortality was 6.3%.

The distribution of cases among patients of various ages departs but little from the usual arrangement as determined by the United States Public Health Service in a recent study of the available statistics.<sup>1</sup> The cases of the Healdsburg epidemic have been arranged according to the ages of the patients in Table I.

Table I—Ages of the Typhoid Fever Patients by Decades.

Ages in Years.	Numbers of Patients.
3 to 10	17
11 to 20	19
21 to 30	22
31 to 40	18
41 to 50	8
51 to 60	5
61 to 66	1
Total	90

In 64 of the 90 cases of typhoid fever the diagnosis was confirmed by a positive microscopic agglutination test. In 17 cases the agglutination test was negative, but most of the samples of blood failing to give a positive reaction were taken early in the disease. In only three cases were negative results obtained from blood drawn over nine days after the onset. All but two of the Widal tests were made in the State Hygienic Laboratory. In nine cases samples of blood were not submitted for examination. Sixteen additional cases were reported but were shown by investigation or later developments to be probably not typhoid fever.

The severity of the cases, as in most typhoid fever epidemics, varied within wide limits. One patient in whom the diagnosis was determined by a positive Widal reaction was in bed only four days. As a prolonged and intensive investigation of this epidemic was not possible, a number of the lighter cases probably escaped attention. There were many severe cases, and among the complications reported were relapses, bronchitis, pneumonia, convulsions, hemorrhages from the bowels, and perforation of the intestines.

#### THE INVESTIGATION.

In response to a request from Dr. J. W. Seawell, Health Officer of Healdsburg, the California State Board of Health instructed me on August 1 to go to Healdsburg and co-operate with the authorities there in finding out the source of the outbreak of typhoid fever. From August 2 to 6 I

made a field study of the epidemic, gathering data from physicians and patients, studying the water supply, investigating suspected sources of pollution of the Russian River as far north as Cloverdale, and advising the city authorities regarding emergency measures of control. In this work I was greatly assisted by the vigorous co-operation of Dr. J. W. Seawell, Health Officer; Mr. C. R. Nelson, Superintendent of the Municipal Water and Electric Light Plants; Mayor A. F. Stevens; and the physicians of Healdsburg.

The source of infection was found to be the city water supply. The city water had been used by all whose cases were investigated, including those persons who resided in the country. The milk supply, on the other hand, came from many sources, including several dairies. Some of the patients were supplied from neighborhood cows. Others used canned milk, and one used only goat's milk. There were no vegetable or food supplies nor eating places common to the majority of the patients. The case against the city water was further strengthened by the fact that a sample of the water had been sent by a city official to the State Hygienic Laboratory on May 5, 1914, and colon bacilli had been isolated from amounts of the water as small as one cubic centimeter. A moderate pollution with intestinal bacteria was, therefore, demonstrable at least two months before the epidemic began. If the State Board of Health had had in its employ a sanitary engineer to make the field investigation necessary to determine the full significance of the laboratory findings, he could then have demonstrated to the local officials the need for immediate treatment of the water supply, and the epidemic might have been prevented and seven lives saved.

The course of the epidemic is shown in the accompanying chart. The number of cases beginning on each day is shown by the height of the shaded area. Light shading indicates that the patient recovered, and dark shading denotes a fatal termination. The characteristics of a water-borne typhoid fever epidemic, as contrasted with a milk-borne or food-borne epidemic, are shown by the gradual beginning and prolonged course. To emphasize this contrast, this water-borne epidemic is compared in the chart with the recent food-borne typhoid fever outbreak in Hanford, California.<sup>2</sup> The former began gradually and was prolonged, because the infectious material was supplied through a long period of time, while the Hanford epidemic began suddenly and was brief, since it was due to infection from a single dish of food. In the former, a very small proportion, probably about five per cent., of the people who repeatedly drank the moderately polluted water came down with typhoid fever, while in the latter 57 per cent. of those who ate the highly infected food developed the disease. In epidemics due to a sudden, severe, and brief infection of a drinking water supply the outbreak may be explosive, like a typical food-borne epidemic, but the Healdsburg outbreak represents the more usual type of water-borne epidemic.

Some of the late cases in the Healdsburg epidemic were probably infected from the earlier cases



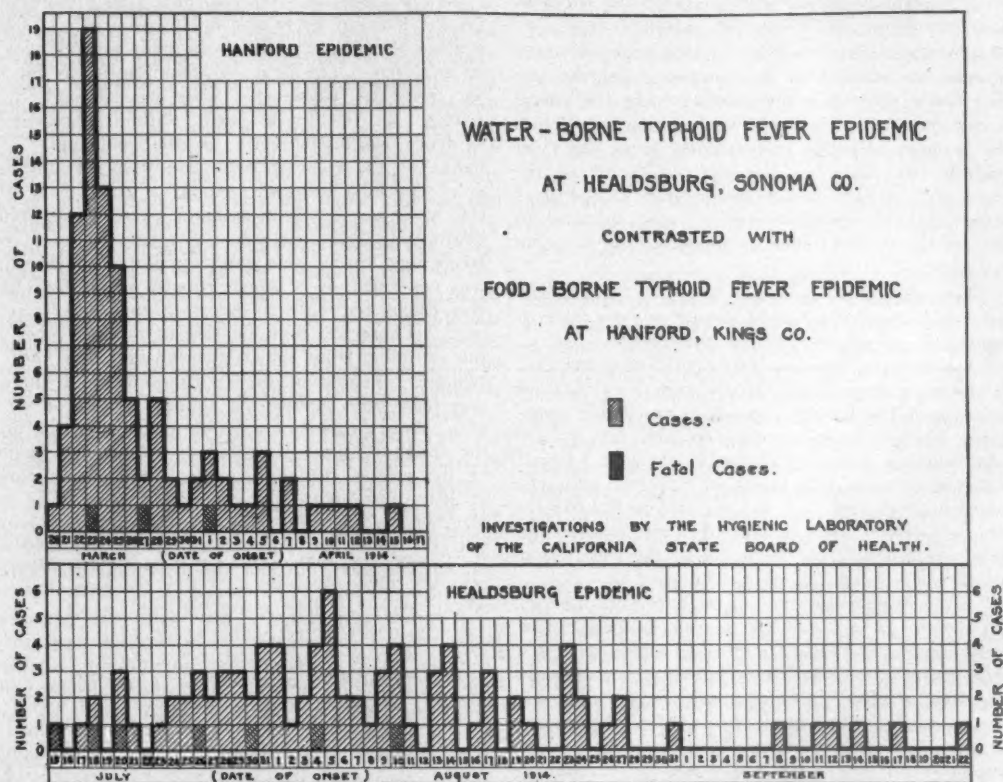
instead of directly from the city water. This would account for most of the cases in the small group at the end of the epidemic.

About the middle of July, when the epidemic was beginning, there were many cases of diarrhea among the people of Healdsburg, according to the reports of several of the physicians. It is not uncommon for cases of diarrhea to accompany or precede a water-borne epidemic of typhoid fever. In the water-borne typhoid epidemic at Rockford, Illinois, a city of 50,000 people, about 10,000 cases of enteritis occurred between January 16 and 20, 1912, and this outbreak was followed by 199 cases of typhoid fever having their onsets between January 23 and February 29.<sup>3</sup> Many Rockford people had both diseases.

The parts of town which received the least water through the supposedly infected pipes had their full share of cases. Moreover, at the time of the field investigation the daily number of new cases was increasing, although over three weeks had elapsed since the last pipe was laid. The epidemic was evidently not due to sewage accidentally admitted to the new pipes.

#### THE WATER SUPPLY.

The Healdsburg water supply is pumped from five wells situated a short distance above the city in the bed of the Russian River. The wells are in that portion of the wide river bed which is submerged only during high water. Three of the wells, 1, 2, and 3, were bored to depths of 54, 34



It was suspected by some of the physicians that the diarrhea and the earlier cases of typhoid fever in the Healdsburg epidemic were due to the accidental inclusion of sewage in some new water mains. Some 1500 feet of new cast-iron pipe were laid in certain streets of Healdsburg, mostly in the business district, between June 23 and July 10. At one point a disconnected house-drain was said to have been seen discharging into a ditch which had been dug to receive the pipes. The contractor who laid the pipes denied the possibility of the inclusion of sewage. No cases of typhoid fever antedating the epidemic had come to the attention of the physicians of Healdsburg, and the laborers who dug the ditches and laid the pipes were all local men who were apparently well.

and 36 feet respectively. They were 20 inches in diameter and had been sealed at the top with cement to prevent the entrance of river water during freshets. Well No. 4, the one nearest the river, is an old dug well with a brick curb, and is ten feet in diameter and between 25 and 30 feet deep. A wooden cover bolted in place was intended to prevent the entrance of river water. This well is 42 yards (measured by pacing) from the edge of the water in the river at the summer level. Well No. 5 is a large dug well situated near well No. 4 and almost as near to the river. This well is 12 feet in diameter and 40 feet deep, and is protected by a wooden cover. All five of the wells were sunk into the gravel and sand of

the river bed without encountering any impervious strata.

The pipes from the five wells are all connected and it is impossible to tell how much water comes from each. From the pumping station the water goes to two reservoirs on a hill 122 feet higher than Healdsburg. Their combined capacity is said to be 500,000 gallons. The wells are reported to furnish between 500,000 and 600,000 gallons a day.

On August 3rd and 4th samples were taken at the surface of the water in each of the two dug wells, at the surface of the water in each reservoir, from the pipe carrying the mixed water of the five wells from the pumping station, from a faucet in the center of the city, and also from the Russian River opposite the wells. These samples were packed in ice and sent to the State Hygienic Laboratory for bacteriological examination.

At the laboratory it was found that the total number of bacteria in the samples from the two dug wells and from the pipe carrying the mixed water from the five wells was approximately half the number found in the samples from the river opposite the wells. The bacterial count of the water in the reservoirs exceeded that of the river water, and the bacteria in the water collected in the city were five times as numerous as those in the river.

These variations were due largely to water bacteria and were not so important to the investigation as were estimates of the numbers of intestinal bacteria, represented by the colon bacillus. In the river water colon bacilli were isolated from amounts of the water as small as one cubic centimeter, but not from 0.1 c.c. In well No. 4 they were found in 3.0 c.c. and not in 1.0 c.c. In well No. 5 they were not found in 3.0 c.c., although bacteria producing gas in glucose medium were demonstrated in 1.0 c.c. of the water. In the sample from the mixed water of all the wells colon bacilli were found in 3.0 c.c. but not in 1.0 c.c., and in each reservoir they were found in 5.0 c.c. but not in 3.0 c.c. In the sample from a faucet in the city, taken August 4th, colon bacilli were isolated from 1.0 c.c. and not from 0.1 c.c., a result the same as that for the sample in the Russian River and for the sample previously taken from the distributing system on May 5, 1914. The samples taken where the water was kept agitated, as in the river and in the pipes above the pumping station and in Healdsburg, as a rule showed a number of colon bacilli which was greater than where the water was quiet and undergoing sedimentation, as at the surfaces of the reservoirs and of the dug wells when the pumps were not running. When the pumps are in operation, a large part of the water enters the distributing system without passing through the reservoirs, and there is, therefore, little purification by sedimentation between the wells and the consumer.

In brief, the laboratory examinations showed that the water in the river was polluted with sewage and was not appreciably purified by passing through at least 42 yards of gravel and the city water system. The pollution in the river was about equal to that in the distributing system of the city. In

each instance colon bacilli were demonstrated in 1.0 c.c. of the water but not in 0.1 c.c. The same grade of pollution had been demonstrated in the water previous to the appearance of typhoid fever, i. e., on May 5, 1914.

In order to complete the demonstration that the city water came from the Russian River, samples were taken from a faucet in the city and from the river and sent for chemical analysis to Professor M. E. Jaffa, Director of the State Food and Drug Laboratory. The reports of the analyses were almost identical, and Professor Jaffa stated in the letter with his report, "It would appear from the enclosed data that these waters are practically from the same source."

#### THE POLLUTION OF THE RIVER.

Many towns and the city of Ukiah are situated on the Russian River above Healdsburg, and some sewage pollution, coming from many sources, would be expected. The principal communities as far up the river as Cloverdale were visited and their sewage systems investigated, without discovering evidence bearing directly on the epidemic. The banks of the river in the vicinity of Healdsburg were carefully studied. About a mile above the city wells a sewer from a summer resort was found discharging fecal matter into a part of the river freely used for boating and swimming. The outlet was concealed by a dense growth of willows and was discovered only by entering the thicket in a boat. There had been no case of typhoid fever at the building from which the sewage came, but a typhoid convalescent or a chronic typhoid carrier may have been among the summer guests or servants. Some connection between the epidemic and the summer guests is probable, because the height of the season for the summer resorts was early in July, just before the epidemic began. The resort whose untreated sewage was found flowing into the river had only six guests at the time of the investigation, but had had over a hundred early in July.

A grave responsibility rests with the physician who sends a convalescent from typhoid fever to a summer resort without first ascertaining whether the sewage from the resort is properly disposed of, or at least warning the local health officer so that he can investigate.

At the time of greatest population in the camps and taverns along the river it is probable that the sewage pollution was greater than at the time of the investigation. A number of cottages have cesspools in the bed of the river where the water can quickly drain through the loose sand and gravel and pollute the stream.

So long as the Russian River is used extensively for boating and swimming, the pollution of the river by the entrance of raw sewage, the untreated effluent from septic tanks, and the seepage from cesspools situated in the river bed should be prohibited. Otherwise typhoid fever and other water-borne diseases must be expected.

#### SEWAGE DISPOSAL.

The sewage of a city in which typhoid fever is prevalent is a source of danger. The Healdsburg sewage passes through a septic tank and is then

conveyed to Dry Creek, which empties into the Russian River several miles below Healdsburg. Inspection of the creek showed a condition typical of many of our California water-courses in summer. There was a wide gravelly creek-bed through which flowed a small stream, sometimes rippling over the stones, often concealed under the gravel for twenty yards or more, and occasionally standing in shallow pools. A sample of water was taken from a pool 197 yards below the sewer outlet. The water had flowed through three pools for a total of 150 yards and through two stretches of gravel for 47 yards. Colon bacilli were isolated from 0.001 c.c. of the water, which was not tested in smaller amounts. Such a test demonstrates only the facts, well known to sanitary engineers, that the septic tank cannot be depended upon to remove colon bacilli from sewage, and that the same can be said regarding rapid percolation through loose gravel. Investigations of septic tanks under favorable conditions have shown that the content of intestinal bacteria, as indicated by the number of colon bacilli, is not greatly reduced when the sewage passes through a septic tank.<sup>4</sup> Likewise, typhoid bacilli and many other pathogenic organisms can survive the septic tank, as the conditions are not sufficiently unfavorable to bring about their destruction. The function of the septic tank, whether it be of the Cameron type, of the Imhoff type, or of any other variety, is to reduce the amount of suspended solids by sedimentation and putrefaction of the sediment under anaerobic conditions. The effluent from the tank is about as dangerous as the same sewage without treatment, but owing to the decrease in putrescible solids, it becomes less of a nuisance. The effluent should undergo further treatment if it is to enter a stream which is used, unpurified, for drinking purposes.

The flowing of polluted streams through the gravel of their beds, under the summer conditions exemplified in Dry Creek, does not purify the water, and the drinking of water from the pools or "springs," as they are sometimes called, is dangerous. It is obvious that water running rapidly through gravel, either from a river to shallow wells or in the bed of a stream, does not allow a sufficient time factor to insure adequate filtration. Both the rapidity of flow and the coarseness of the material are such that sufficient purification by filtration is not effected.

The epidemic of 350 cases of typhoid fever at Centralia, Washington, in December, 1913, and January, 1914, was caused, like the Healdsburg epidemic, by taking water from wells sunk into the gravel at the edge of a polluted river.<sup>5</sup> The water had to pass through at least twenty feet of gravel. The percentage of the population involved (3.5%) and the case mortality (6.5%) were almost the same as the corresponding figures for the Healdsburg epidemic.

#### CONTROL OF THE EPIDEMIC.

Prior to the investigation, Dr. Seawell, City Health Officer of Healdsburg, suspected the city water supply as the source of the infection and instructed the people, through a local newspaper,

to boil all drinking water, to protect food from flies, and to avoid the eating of raw vegetables. The public was slow to heed this advice, and one of the principal hotels continued to serve raw city water until specially warned.

When the source of infection had been determined, recommendation was made to the city authorities that the city water be treated with hypochlorite as an emergency measure. An extemporized plant for introducing hypochlorite at the pumping station was set up under the direction of Professor H. S. Griswold of the University of California and was operated by local men, beginning on August 7th. Six days after the treatment began, examination showed that colon bacilli could still be demonstrated in 1.0 c.c. of the water, although the total bacterial count had fallen from 600 to 20 per c.c. The amount of hypochlorite was then increased. Twenty days after the treatment began the local authorities sent another sample, which showed that the water was entirely safe. The bacterial count was 1 per c.c. and colon bacilli were absent in 10 c.c.

The new cases continued to be reported in considerable number for twenty days after the first application of the hypochlorite treatment, but after that there were only scattered cases, probably secondary to earlier cases.

In order to reduce the number of new infections from the city water and from the earlier cases, the physicians administered typhoid vaccine to many persons. The State Hygienic Laboratory issued to Healdsburg physicians, between July 28 and September 4, vaccine for immunizing 642 people, and most of it was undoubtedly administered. The vaccine used was the sensitized typhoid vaccine manufactured in accordance with the method of Gay and Claypole and issued free to physicians of California. The vaccine was given in three doses at intervals of two or three days, thus permitting the complete treatment to be administered in five days instead of in twenty-one days, as is required by the usual methods. Two persons developed typhoid fever between the first and last dose. Only one suspected case of typhoid fever was reported among those for whom vaccination was completed. A man who received his three doses of vaccine on August 5, 7 and 12, became sick on December 13, nearly three months after the last case of the epidemic, complaining of headache and backache and swelling of the eyelids. He had a moderate fever which had fallen to normal on December 29. A diagnosis of abortive typhoid fever was made by the attending physician. A positive Widal reaction was obtained, but it may have been entirely due to the vaccination. Unfortunately the case came under the observation of his physician too late for a blood culture to be of value. Among the unvaccinated there were 41 cases subsequent to August 6, a date sufficiently late to permit the earliest patients to have received three doses of vaccine.

#### SUMMARY AND CONCLUSIONS.

1. The Healdsburg epidemic of 90 cases, including seven deaths, was caused by polluted water which passed from the Russian River through at



least 42 yards of gravel to the wells of the city water system.

2. Rapid straining through coarse gravel and sand, either naturally through the beds of our dry creeks, or from a contaminated stream to wells, cannot be depended upon adequately to purify polluted water.

3. Septic tanks do not free sewage from typhoid bacilli and other pathogenic organisms, and their untreated effluents may seriously contaminate a stream.

4. As long as the Russian River is used extensively for boating and swimming, it should be protected from the entrance of raw sewage, the untreated effluent of septic tanks, and the seepage from cesspools situated in the river bed.

5. Inasmuch as every typhoid fever epidemic increases the amount of the disease in distant parts of the state and in future generations, and since the question of the water supply and sewage disposal of each community necessarily involves more than the one community, it is the duty of the state to examine all public water supplies and sewage disposal systems at frequent intervals and to prevent the use for drinking purposes of dangerously polluted water. Sanitary engineers in the state's employ are needed for carrying on this work. They are needed, also, to look after engineering aspects of the investigation of water-borne epidemics like the one in Healdsburg, and to aid in emergency measures for their control.

<sup>1</sup> Public Health Reports, U. S. Public Health Service, Feb. 19, 1916, XXX, No. 8, 534-536.

<sup>2</sup> Sawyer, W. A.: Ninety-three Persons Infected by a Typhoid Carrier at a Public Dinner. *Jour. Am. Med. Assoc.*, Oct. 21, 1914, LXIII, 1537-1542.

<sup>3</sup> Jordan, Edwin O., and Irons, Ernest E.: The Rockford (Ill.) Typhoid Epidemic. *Jour. of Infectious Diseases*, July, 1912, Vol. XI, No. 1, 21-43.

<sup>4</sup> Kinnicutt, L. P., Winslow, C.-E. A., and Pratt, R. W.: Sewage Disposal, first edition, 1910, pp. 378-379.

<sup>5</sup> Fuller, George W.: Sewage Disposal, 1912, pp. 472-474.

<sup>6</sup> Kelley, E. R., and Macomber, S.: Typhoid Fever Epidemic—Centralia, Washington. *American Journal of Public Health*, November, 1914, Vol. IV, No. 11, pp. 1035-1045.

### SCHOOL HYGIENE CONGRESS.

One of the most important associations to hold its meetings in San Francisco during the Medical Period is the American School Hygiene Congress on the 25th and 26th of June. For the past seven years this Association has stood for the conservation of childhood, especially in the schools. Problems relating to the open air school, the hygiene of the rural school, the organization of health work in cities, and state organizations of child welfare and hygiene teaching will be discussed by authorities from various sections throughout the country. Everyone interested, and every physician should be interested in child welfare, will find an opportunity during these meetings to get in touch with the most advanced opinions along all lines of child welfare work and anyone contemplating being in San Francisco for the American Medical Association meetings should not fail to adjust his time to attend these two days of meetings.

When one stops to consider how little is being done in the way of open air schools in our larger cities in California, how poor the hygiene is in our rural schools, that city organization of child wel-

fare work practically does not exist, except in one or two centers where the beginnings have just been made and that there is no state organization of child welfare in California, one realizes the need of such meetings as the coming American School Hygiene Association meetings. It seems to the writer that there is hardly any subject of more importance to the medical profession of California which will stimulate the development of child welfare work than will be offered during these meetings. California has a few open air schools but we should have many more as our climate lends itself to a development of this type of school. Not half of our public school children have adequate medical supervision and many of the defects which handicap a child's later success in life as well as diminish its capacity to learn, appear and develop unnoticed during its school life. We physicians need to become interested in our public school system, to see the lack of health work being done and that each municipality has adequate machinery for carrying out medical supervision of schools.

WILLIAM PALMER LUCAS,

Secretary-Treasurer, Local Committee of Organization.

### REQUEST FOR INFORMATION REGARDING TYPHOID VACCINE.

All available statistics regarding the benefits and limitations of the prophylactic use of typhoid vaccine in the civil population of California are being collected by the Hygienic Laboratory of the California State Board of Health. Physicians are earnestly requested to write a letter containing answers to the following questions and to mail it at once to Dr. W. A. Sawyer, Director of the State Hygienic Laboratory, Berkeley, California:

1. How many persons did you vaccinate against typhoid fever in California before April 1, 1915? Please state the kind (sensitized or ordinary) and the manufacturer of each typhoid vaccine used and the number of persons vaccinated with each.
2. To what extent were the vaccinated persons exposed afterwards to typhoid fever?
3. About how many cases of typhoid fever were there in your community in 1914?
4. Do you think that vaccination has appreciably diminished typhoid fever in your community?
5. In how many of your cases would you consider the reaction after typhoid vaccination (local soreness, malaise, fever) to be absent? Slight? Severe? Severe enough to warrant staying in bed at least half a day? (Please indicate separately the results with each different kind or make of vaccine.)
6. If any cases of typhoid fever have occurred among persons whom you had previously vaccinated against typhoid fever, or in patients who had been vaccinated by other physicians, please supply the following data:

Initials or name of patient.

Physician who administered vaccine.

Kind of vaccine and manufacturer.

Number of doses and dates of each.

Date of first symptoms of typhoid fever.

Basis of diagnosis: symptoms, Widal test, blood culture.

Duration, severity, and final result of the disease.

7. If you have heard of any case of typhoid fever in a vaccinated person, outside your practice, please give the name and address of the physician or patient so that particulars can be obtained.

### CASE REPORT.

#### Fracture of the Left Clavicle by Muscular Action\* (Without Blow or Fall).

By P. CAMPICHE, M. D., San Francisco.

M. T. of San Francisco, 13 years old, has never been sick and has always been a very strong boy. On December 20th, 1914, he was pumping air into the tire of his bicycle in the following manner: he was kneeling on the ground, pressing with his right hand on the base of the pump so as to steady it; with his left arm, which was elevated and abducted, he was just starting to bring the handle of the piston down when he felt a sharp pain in his left shoulder. His aunt, who saw him at the time, said that he turned quite pale. However, he did not complain any more about it and did not go to see a doctor.

At the end of January (about five weeks later), his mother brought the boy to me with what she thought might be a "growth" in the shoulder. The lump now felt in the middle of the clavicle has all the characteristics of a healthy callus. The X-ray plate confirms this view, and shows a transverse subperiosteal fracture of the clavicle, with large callus.

Dr. E. Rixford, discussing the case, accepted the diagnosis of fracture by muscular action; he agreed that there is no reason to think of a pathological fracture here as solid union has taken place and the callus is normal in every respect.

#### AN ACCIDENT WITH NEO-SALVARSAN.\*\*

By A. DAVIDSON, M. D., Los Angeles.

X. Y. A stout, vigorous man, 27 years of age, weighing about 180 lbs., came to my office on the recommendation of his medical attendant, for an injection of neo-salvarsan. Six weeks before he had acquired a chancre and now showed a mild leucic rash of about one week's duration; no headache, fever or other disturbances. He had been taking mercury for about two weeks.

At 12 M. I injected dose iv. (0.6 gr.) neo-salvarsan, using 10 cc. of water in the prescribed manner. Before the needle was withdrawn, a spasm of pain was complained of "in the pit of the stomach," as he expressed it. He tossed in agony, and began retching of mucus. Perspiration rolled off his forehead, the skin of the arms showed extreme "goose flesh," his pulse became small and thready, began to intermit, and in five minutes he was pulseless, cyanosed with clammy skin, all the while conscious and said the pain was now in his heart and agonizing, air hunger was marked.

Fifteen minims adrenalin brought the pulse up so that intermittent beats could be felt, but in a short time he became pulseless again. A second dose was administered and repeated, as it seemed to be required in fifteen minutes again. At 1 p. m. the

pulse was palpable but very irregular, he was still markedly cyanosed, lips and eyelids edematous.

I had him removed to the Clara Barton Hospital. When put to bed he vomited freely of some undigested food, and said he felt better; pulse 106 feeble but palpable. Drop enema salt solution given.

At 2:10 pulse 120—very weak.

At 2:30 pulse 126—very weak and intermittent, bowels moved.

At 3:00 pulse 120.

At 4:30 pulse 114—temperature 98°, feeling better.

At 6:00 pulse 95.

At 8:00 pulse 78.

Next day pulse was 66, temperature 98°. Had a light breakfast and except for some weakness which persisted for a few days, he felt quite well.

I am moved to report this case for two reasons: first, to warn you of the possibility of such an accident following the use of the hypodermic method, and secondly, to emphasize the value of adrenalin as the best and probably only means of saving life in these unfortunate cases. Use and repeat the adrenalin as often as the failure of the pulse would indicate. In this case I gave 60 M. of the 1-M. 1000 Sol. in the first hour, and response to its action showed immediately in the return of the pulse.

All of our medical journals have commented on and freely discussed the sickness and occasional fatalities that have followed the use of salvarsan. These are probably wholly due to arsenical poisoning, but of such accidents as I here relate, I have only found indefinite reference in European literature.

The instantaneous collapse that followed the injection, bears out the assertion made by a French observer, who affirmed that salvarsan contained some product that caused marked vaso dilation, and that many of the unfortunate after results were due to this property.

When the patient in question vomited after reaching the hospital, the remains of food expelled had a markedly spirituous odor. The presence of alcohol under such circumstances is an added danger, and may have been the cause of the symptoms displayed, as it too has a vaso dilator action, and may have accentuated that quality in the salvarsan.

### BOOK REVIEWS

**Diagnostic and Therapeutic Technic.** A Manual of Practical Procedures Employed in Diagnosis and Treatment. By Albert S. Morrow, M.D., Clinical Professor of Surgery, New York Polyclinic. Second edition, Thoroughly Revised. Octavo of 834 pages, with 860 illustrations. Philadelphia and London, 1915. Cloth, \$5.00 net; half morocco, \$6.50 net. W. B. Saunders Company, Philadelphia, London.

While this admirable compendium contains a wealth of material of the greatest possible importance to the practitioner, it somehow seems to fall short of being a practically useful work.

A great portion of the book is devoted to methods that belong in the hands of the specialist and should be sought for in the special text-books.

There is much contained in this volume that no practitioner should ever seek in a text-book but should have learned in the clinic or at the bedside.

These points give the reasons why this work should not be added to the working library but place it in line with the dictionaries. In other words for a positive clinical manual it is not exhaustive enough and is too elementary.

G. H. T.

\* Presented before the Surgical Section, San Francisco County Medical Society, February 16, 1915.

\*\* Read before the Los Angeles Medical Society, January 7, 1915.

**Medical Diagnosis.** By Arthur Latham, M. D., F. R. C. P., and James Torrens, M. B., B. S., M. R. C. P., Both of St. George's Hospital, London. Pp. 641; 74 illustrations. New York, Macmillan Company; 1915.

This book of large type and clear, concise sentences represents a well ordered, rather brief attempt to give the student and practitioner the most useful clinical and laboratory details necessary for the purpose of making scientific diagnosis. The essentials in these matters have been brought well up to date and a glance at any one topic gives one the important facts. It is, in short, a skeleton upon which a thorough work could be built, but it must be admitted that the authors have succeeded in carrying out their purpose very nicely so that for those requiring this kind of reference, this work fills the requirements. H. F. A.

**Worry and Nervousness.** By William S. Sadler, M. D. A. C. McClurg & Co., Chicago, 1914.

This lengthy volume of 535 pages has been written primarily for the layman suffering from "nerves."

The simplicity of its exposition makes it a good "primer" for a physician not especially trained in psychic disturbances, for it gives in great detail a description of the various functional disturbances and their treatment. But this book, in the hands of a nervous layman, is very liable to produce an increase in the number of symptoms by the very means through which the author would prevent them, viz: by suggestion. In place of giving the book to the patient it would be a thousand-fold better to read short pertinent paragraphs to the patient to increase the effect of "positive" suggestion. This has worked more effectively than permitting the patient, already too introspective, to become acquainted with many more possible symptoms. The book has value as a primer of psychotherapy, but should be used only under the supervision of a physician who has some knowledge of abnormal psychology. J. M. W.

**Students' Manual of Gynecology.** By John Osborn Polak, M. Sc., M. D., F. A. C. S., Professor of Obstetrics and Gynecology, Long Island College Hospital; Professor of Obstetrics in the Dartmouth Medical School; Gynecologist to the Jewish Hospital; Consulting Gynecologist to the Bushwick, Coney Island, Deaconess' and Williamsburg Hospitals, Brooklyn, and the Peoples Hospital, New York; Fellow American Gynecological Society, etc. 12mo, 414 pages, illustrated with 100 engravings and 9 colored plates. Cloth, \$3 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

In a volume of three hundred and ninety-eight pages the author has well succeeded in presenting most of the essential points of gynecological symptomatology, diagnosis, and treatment. The subject matter is well presented and easily read, and will give any student a good introductory knowledge. C. B. M.

**Obstetrical Nursing.** A Manual for Nurses and Students and Practitioners of Medicine. By Charles Sumner Bacon, Ph.B., M.D., Professor of Obstetrics, University of Illinois and the Chicago Polyclinic; Medical Director, Chicago Lying-In Hospital and Dispensary; Attending Obstetrician, University Chicago Polyclinic, Hertenin, German and Evangelical Deaconess Hospitals. 12mo, 355 pages, illustrated with 123 engravings. Cloth, \$2.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

While this little volume is intended as a "Manual for Nurses, Students and Practitioners of Medicine," it will find its greatest usefulness in the hands of the nursing profession. It is simple, well ar-

ranged and well written. The first chapter on the nurse's duties is most excellent and should be read by every nurse that contemplates doing obstetrical nursing. The advice as to dress, exercise, diet, etc., during pregnancy is good. The chapter on the duties of the nurse while the patient is in labor is very thorough as regards cleanliness and asepsis but it does not seem justifiable to allow the nurse to make vaginal examinations. The same information can usually be obtained by rectal examination and the patient is subjected to less danger of infection. The chapters on the Puerperium and the Infant are interesting and instructive. The book as a whole is to be highly recommended and should be well received. H. A. S.

**The Practical Medicine Series.** 1914. Year Book Publishers, Chicago.

**Obstetrics, Vol. VII.** Edited by Joseph B. De Lee & Herbert M. Stowe. Price, \$1.35.

An excellent and well digested review of the year in obstetrics, both of the foreign and American literatures.

**Materia Medica & Therapeutics, Preventive Medicine, Climatology.** Vol. VIII. Edited by Geo. F. Butler, Henry B. Favill, Norman Bridge. Price \$1.50.

This volume is so much condensed that a great deal of important matter has been omitted from each subdivision, thus diminishing the value of the book as a comprehensive guide.

**Nervous & Mental Diseases.** Volume X. Edited by Hugh T. Patrick and Peter Bassoe. Price, \$1.35.

In this number of the Practical Medicine Series most of the American and some of the foreign work in these fields is quite thoroughly abstracted and very satisfactorily presented. G. H. T.

**The Clinics of John B. Murphy, M.D.,** at Mercy Hospital, Chicago. Volume IV, number I (February 1915). Octavo of 185 pages, 41 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published bi-monthly. Price per year: paper, \$8.00; cloth, \$12.

#### Contents.

Murphy's clinical talks on surgical and general diagnosis.

The relation of cancer research to the clinical aspects of cancer.

Aneurysm of the brachial artery—endoaneurysmorrhaphy.

Division of the brachial plexus at the level of the first rib. Suturing of the divided nerve-trunks.

Mixed round- and spindle-cell periosteal sarcoma of the right femur. Disarticulation of the hip.

Series of drawings illustrating Dr. Murphy's method of bone transplantation for the non-union of the tibia, cases of which have already been reported in the Clinics.

Open reduction of a posterior dislocation of the spine at the level of the second lumbar vertebra. Laminectomy.

Old compound fracture of the right malar bone resulting in loss of the external wall of the orbit. Outward dislocation of the eyeball. Unsuccessful paraffin injection. Successful bone transplantation.

Ununited birth fracture of the clavicle. Ends freshened and united with a lane plate after invagination.

Carbuncle of the arm. Septicemia. Metastatic pleurisy. Death.

Contracting cicatrices on index-finger and thumb. Excision. Plastic operation.

Lacerated wound of thumb. Emergency case. Malunion of a fractured femur with great angular deformity. Open reduction and plating. Hemorrhagic cyst at the fracture site.

A talk on a case of gangrenous appendicitis operated the previous evening.



**Diseases of the Heart.** By John Cowan, D.Sc., M.D., F.R.F.P.S., Professor of Medicine, Anderson's College Medical School; Physician, Royal Infirmary; Lecturer in Clinical Medicine in the University of Glasgow; Examiner in Medicine, Royal Army Medical College. Octavo, 458 pages, with 199 illustrations. Cloth, \$4.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

This volume has a distinct place in recent medical literature and brings very satisfactorily under one cover the newer outlook on the pathological physiology of the heart. It is a most intelligible exposition of the subject put forward in such a readable fashion that even those utterly unversed in the special knowledge of the heart, may approach it not only without fear but even with pleasurable anticipation. The form of the volume is most convenient, and the numerous tracings and diagrams supplied are apt and well chosen. Quite correctly, the subject of vascular diseases, is not comprehensively covered, and it seems rational that in the newer text books and monographs, cardiac diseases and vascular diseases will be treated under separate covers.

Naturally, this volume must suffer from the criticism due any volume on the subject published at this particular era. Owing to the vast amount of research going on, and the small amount of matter as yet made quite clear, such volumes are quickly out of date and need revision and addition almost as soon as they are printed. The reviewer is quite certain that Dr. Cowan will supply a revised edition shortly, and from the promise given by the present book, the new one should also be of great value.

H. I. W.

**Modern Medicine.** Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M.D., F.R.S., Regius Professor of Medicine in Oxford University, England; formerly Professor of Medicine in Johns Hopkins University, Baltimore; in the University of Pennsylvania, Philadelphia, and in McGill University, Montreal; and Thomas McRae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia; Fellow of the Royal College of Physicians, London; formerly Associate Professor of Medicine in Johns Hopkins University, Baltimore. In five octavo volumes of about 1,000 pages each. Volume IV. Diseases of the Circulatory System; Diseases of the Blood; Diseases of the Lymphatic System; Diseases of the Ductless Glands; Vasomotor and Trophic Disorders. Just ready. Price per volume, cloth, \$5.00, net; half morocco, \$7.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1915.

Volume IV shows a slight change from that of the previous edition by the addition to this volume of the section on the ductless glands and that on vasomotor disorders. Of exceptional interest is the admirable article on cardiac mechanism by Thomas Lewis. It is perhaps the clearest summary yet published of the results of recent work on heart action and their clinical application. The chapter on congenital heart lesions by Maud E. Abbott has been enlarged and is indeed exhaustive. That on blood by Cabot shows revision and minor changes throughout. Longcope's able article on Hodgkin's Disease gives an unchanged prognosis despite the recent work on its etiology and treatment. In the present volume the spleen is grouped not with the lymphatic system but among the ductless glands. The articles upon the latter are brief, but a trifle disappointing. Pratt's chapter on hemophilia is brought well up to date with an excellent discussion of the newer theories of coagulation. The articles in this volume are of high grade.

H. S. F.

## SOCIETY REPORTS

### FRESNO COUNTY.

The Fresno County Medical Society has held three well attended meetings this year on the first Tuesdays of January, February and March.

At the February meeting the following officers were chosen: President, Dr. J. L. Maupin; First Vice-President, Dr. R. M. Jones; Secretary, Dr. L. R. Willson; Assistant Secretary, Dr. C. D. Sweet; Treasurer, Dr. F. M. Hayden; Delegate to the State Society, Dr. C. O. Mitchell.

At the same meeting the routine business of the Society was placed in the hands of a board of five governors, one of whom is to be elected each year to serve five years. Dr. G. H. Aiken was elected to this board for one year, Dr. D. H. Trowbridge for two years, Dr. W. F. Barr for three years, Dr. J. R. Walker for four years, and Dr. L. R. Willson for five years.

After the election, two very interesting papers on Eugenics and The Ring to Ring Incision in Hernia were read by Dr. Harry M. Sherman of San Francisco.

At the February meeting Dr. C. O. Mitchell gave a talk on Asiatic Cholera, and Dr. C. D. Sweet exhibited some cases of bronchial gland tuberculosis with radiograms.

This month Dr. B. F. Walker of Stockton, who has lately returned from service in a French Red Cross Hospital, told us of his experiences in a most interesting manner; and Dr. R. M. Jones exhibited a case of tabes. Drs. George L. Long of Fresno and James Allen McKenny of Parlier were elected to membership. Twenty dollars was subscribed to aid the California Association for the Study and Prevention of Tuberculosis.

Dr. C. D. Sweet was appointed to report each meeting of the Society to the State Journal.

On Tuesday, April 6, the regular monthly meeting of the Society was held in the offices of Drs. Anderson and Pettis, with thirty-eight members and visitors present.

Dr. C. L. A. Rinker of Madera was elected to membership.

A motion was passed to use every endeavor to have the 1916 Annual Meeting of the State Society in Fresno.

A committee was appointed to confer with the Fresno County Bar Association in regard to a future joint meeting.

Resolutions commending the work of Dr. L. R. Willson as City Health Officer, and asking the Mayor and City Board of Health to continue him in office, were passed.

The scientific program consisted of a paper on A New Procedure for Correction of Retrodisplacement of the Uterus, by Dr. S. H. Buteau of Oakland; and A Discussion of Various Procedures for Correction of Retrodisplacement, illustrated by lantern slides, by Dr. C. A. Dukes of Oakland. Both parts of the program were much enjoyed, and the members of the Society feel greatly indebted to Drs. Buteau and Dukes.

After the usual social hour the Society adjourned.

CLIFFORD D. SWEET, Asst. Secretary.

### LOS ANGELES COUNTY EYE AND EAR SECTION.

The monthly meeting of the Eye and Ear section of the Los Angeles County Medical Association was held in the office of Dr. Frank W. Miller, 1020 Merchants' National Bank Bldg., at 8 o'clock in the evening of April 5th.

The Chairman, Dr. Hill Hastings, presided.

Clinical cases were exhibited by the following:

Dr. C. G. Stivers—Double ethmoid exenteration showing the orifices of the sphenoid sinuses. A previous operation by a Boston Rhinologist was followed by a small septal perforation through which the patient could whistle at will, and often—

times in conversation during the formation of the nasal sounds m, n, ng. The perforation is to be closed by a plastic operation.

Dr. Frank Detling showed a case of tooth in the maxillary antrum and a Roentgenogram of it, in situ.

Dr. F. D. Bullard, a case of Cycloplegia luetica.

Dr. J. M. Brown reported two cases of Herpes—with the blisters on the side of the face, tongue, lips and tympanic membrane.

Dr. Kelsey reported a case of steel in the eyeball removed by the magnet.

Dr. J. J. Kyle—Roentgenogram of the semi-circular canals and cochlea in a child; also three cases of Erysipelas in operative cases.

Dr. Albert Soiland read his paper "Roentgenologic interpretation of ordinary skull conditions," illustrated by many X-ray pictures.

After a spirited discussion as to the value of X-rays, and the necessity of the clinician knowing the angle at which the X-ray was taken, and the great value of correct interpretation, the members adjourned.

C. G. STIVERS, M.D.,  
Secretary.

#### SACRAMENTO COUNTY.

Forty-seventh Anniversary Meeting celebrating the founding of the Sacramento Society for Medical Improvement was held at the Hotel Sacramento, at 7:30 p. m. The proceedings of the Society consisted of a banquet which was followed by the paper of the evening, "Tuberculosis of the Upper End of the Femur," by T. W. Huntington, M.D., San Francisco, California.

F. F. GUNDRUM, M.D., Secretary.

#### PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February, 1915, the following meetings were held:

##### Section on Medicine, Tuesday, February 2d.

1. Amaurotic Family Idiocy. J. M. Wolfsohn.
2. The Pathology of Amaurotic Idiocy. Jean Oliver. Discussed by W. P. Lucas, H. Barkan and L. D. Green.

##### General Meeting, Tuesday, February 9th.

Diphtheria in San Francisco:

1. Difficulties encountered in controlling the epidemic. (Illustrated by lantern slides.) W. C. Hassler.
2. The reduction of diphtheria morbidity. W. A. Sawyer, Director State Hygienic Laboratory, Berkeley.
3. Practical value of Schick's reaction. W. P. Lucas.
4. The carrier problem in diphtheria. W. H. Kellogg.
5. The epidemic from the hospital standpoint. A. A. O'Neill.
6. The epidemic from the school standpoint. T. D. Maher. Discussed by A. Roncovieri, Supt. of Schools; R. G. Brodrick; Mrs. Graupner of the Civic League; Mr. Arnstein of the Board of Health; W. Ophüls; Miss Sweeney; A. L. Fisher; Miss Regan of the Board of Education; A. Brown and Mr. Judell of the Board of Public Works.

##### Section on Surgery, Tuesday, February 16th.

1. Case of Fracture of the Clavicle by Muscular Action, without Blow or Fall. P. Campiche. Discussed by E. Rixford.
2. Personal Experiences with Cancer of the Rectum. E. Rixford. Discussed by T. W. Huntington, C. G. Levison, A. Newman, A. J. Zobel and J. Rosenstirn.

3. The Ring-to-Ring Incision in Herniorrhaphy. H. M. Sherman. Discussed by J. Rosenstirn and P. Campiche.

##### Section on Eye, Ear, Nose and Throat, Tuesday, February 23d.

1. Demonstration of Patient operated upon for Sarcoma of the Nose. H. B. Graham.
2. Demonstration of Patient previously shown by H. Barkan: Neuritis and Optic Atrophy (right). Could see only 6/60 before operation on ethmoid; can now read 6/18.
3. Slides from Case of Hyperkeratosis of Tonsil. H. B. Graham. Discussion on above cases by H. Kingwell, C. Welty, M. Fredrick, H. Graham, H. Horn and G. P. Wintermute.

#### PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of March, 1915, the following meetings were held:

##### Medical Section, March 2, 1915.

1. The Blood in Leukemia. H. R. Oliver.
2. Benzol Treatment of Leukemia. W. W. Boardman.
3. Roentgen Ray Treatment of Leukemia. H. E. Ruggles. Discussed by H. C. Moffitt and T. Addis.

##### General Meeting, March 9, 1915.

1. Demonstration of Case of Sympathetic Ophthalmia. C. S. G. Nagel. Discussed by W. F. Blake.
2. Report of Cases from the Medical Dept., St. Luke's Hospital:
  - A. Cancer of liver, probably secondary to previously removed growth in breast, in unmarried young woman.
  - B. Case of nephritis in a child of 11 yrs., with some unusual clinical features. Wm. Kenney. Discussed by J. Wilson Shiels, S. O. Beasley and H. C. Moffitt.
  - C. Case of pernicious anemia.
  - D. Case of secondary anemia. J. W. Shiels.
3. St. Francis Hospital. Presentation of Case Histories (illustrated by lantern slides). J. H. Graves.
  - A. An interesting case of hour-glass stomach.
  - B. X-ray findings in esophageal carcinoma.
  - C. An obscure case of gall stones.
  - D. Treatment of goiter by injections of boiling water.
  - E. End results of paraffin injections for correction of deformity. Cases discussed by R. L. Rigdon and C. W. Lippman.
4. Report of the California Social Hygiene Society. A. E. Graupner, S. A. Goldman.

##### Surgical Section, March 16, 1915.

1. Demonstration of Patient. Sarcoma of Septum; Operation; Recurrence; Treatment with Radium; Patient Free from Recurrence for over a Year. Henry Horn.
2. X-Ray Plates of Chronic Appendices. C. W. Lippman.
3. On the Treatment of Closed Fractures; a Plea Against Unnecessary Operation. P. S. Campiche. Discussed by J. T. Watkins, E. Rixford, J. Rosenstirn, C. C. Crane and A. S. Keenan.
4. Some Remote Effects of Head Injury. H. C. Naffziger. Discussed by E. Rixford, L. Eloesser, H. Wright and S. Hyman.

##### Eye, Ear, Nose and Throat Section, March 23, 1915.

1. Demonstration of Cases:
  - A. Impairment of vision, greatly improved by operation on septum. L. D. Green. Discussed by H. McNaught and A. S. Green.
  - B. Tuberculosis of Ear. Operation followed by recovery. C. F. Welty.
2. Experiences in Eye, Ear, Nose and Throat Involvement at the Isolation Hospital. A. A. O'Neill.

3. The Eye in Infectious Diseases. H. Barkan.  
4. Lantern Slide Demonstration of the Lesions of the Mucous Membranes in Infectious Diseases. H. Morrow.

5. The Tonsil as a Carrier in Diphtheria. C. F. Welty. Discussed by J. Kingwell and H. B. Graham.

#### Urological Section, March 30, 1915.

1. Luetic Advances. Louis Gross.
2. Some Typical Therapeutic Experiences with Syphilitic Patients. V. G. Vecki. Discussed by A. Grosse, R. L. Rigdon, W. B. Stevens, S. O. Beasley and Captain Nichols.

#### PROCEEDINGS OF THE SAN FRANCISCO POLYCLINIC SOCIETY.

San Francisco, March 18, 1915.

The regular alternate monthly meeting of the San Francisco Polyclinic Society was held in the Polyclinic Building at 8:45 p. m., Dr. Alfred J. Zobel in the chair.

The very interesting scientific program was as follows:

1. Paper by Dr. D'Arcy Power on "Abarticular Gout." Discussed by Drs. J. Mora Moss and A. J. Zobel.
2. Demonstration of cases by Dr. Henry Horn: (a) "Case of Stammering"; (b) "Case of Carcinoma of the Larynx." Discussed by Dr. Sanford Blum.
3. Demonstration of cases by Dr. H. A. L. Ryfkogel: (a) "Case of Salivary Fistula"; (b) "Case of Carcinoma of Tongue."
4. Paper by Dr. A. S. Green on "Recent advances in the treatment of different forms of cataract." Discussed by Dr. A. Cohn.
5. Remarks on "End results of Urethral Stricture," with presentation of specimens. Dr. Martin Krotoszyner, assisted by Drs. W. B. Stevens and G. W. Hartman.

The following were present:

Members—Drs. A. S. Green, J. M. Moss, L. D. Green, V. Hulen, A. J. Zobel, H. Horn, G. W. Hartman, D'Arcy Power, A. Cohn, V. Goldman, S. Bunnell, R. S. Martin, A. L. Fisher, G. H. Taubles, F. G. Burrows, Herbert Cohn, S. A. Goldman, H. A. L. Ryfkogel, R. P. Giavonnetti, S. Blum, M. Krotoszyner, W. B. Stevens, C. F. Welty, H. P. Roberts.

Visitors—Drs. Claydon, Minneapolis; Hathaway, McKinnon.

Following the scientific program the meeting adjourned to a cafe for refreshments.

HARRY P. ROBERTS, Sec'y.

#### SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. R. R. Hammond, Friday evening, March 26. The following members were present: Drs. R. R. Hammond, B. J. Powell, L. R. Johnson, R. T. McGurk, J. V. Craviotto, S. E. Latta, H. E. Sanderson, H. J. Bolinger, C. F. English, E. A. Arthur, W. F. Priestly, J. D. Dameron, I. S. Zeimer, W. J. Young, W. J. Backus, R. B. Knight, C. E. Stagner, S. P. Tuggle, J. T. Davison, J. D. Young, Margaret Smyth, H. C. Petersen, Minerva Goodman, E. L. Gnekow, W. W. Fitzgerald, L. Dozier, F. W. McKibbin and Smith of Oakdale, E. V. Falk and B. F. Surryhne of Modesto, N. B. Gould of Ripon and Dewey R. Powell with Dr. William Fitch Cheney and Dr. Stanley Stillman of San Francisco as guests.

At the conclusion of the routine business of the meeting, President McGurk introduced Dr. William Fitch Cheney, who spoke in a thorough and practical manner on the medical aspect of "Congenital Hypertrophic Pyloric Stenosis." The surgical side was taken up by Dr. Stanley Stillman. After discussing the subject freely, the members adjourned

to the dining room, where they were served with delightful refreshments, which were a fitting climax to what was, in the point of attendance, the largest meeting in the history of the society, and from the standpoint of scientific interest, one of the most instructive evenings we have had.

DEWEY R. POWELL, Secretary.

#### SOUTHERN CALIFORNIA MEDICAL SOCIETY.

The fifty-second regular semi-annual meeting of the Southern California Medical Society will be held in San Diego on July 8th and 9th, 1915.

The date of the regular meeting has been changed, by the executive committee, from the first Wednesday and Thursday in May to Thursday and Friday of the above dates in July. This has been done on account of the meeting of the American Medical Association in San Francisco the latter part of June, and it is hoped that some of our friends from the east may be induced to visit San Diego and attend our meeting there, and assist us with the program.

F. W. THOMAS, President.  
WALTER BREM, Secretary.

#### AMERICAN PROCTOLOGIC SOCIETY.

The seventeenth annual meeting of the American Proctologic Society will be held in San Francisco in one of the halls of the Civic Auditorium on June 21st and 22nd, 1915.

Officers of the Society are Dr. Louis J. Krouse, of Cincinnati, Ohio, president; Dr. Collier F. Martin, of Philadelphia, Pa., vice-president, and Dr. Alfred J. Zobel, of San Francisco, Cal., secretary-treasurer.

Visiting doctors who are interested in the study of diseases of the rectum and colon are welcome to attend the meeting and take part in the discussions.

ALFRED J. ZOBEL, Secretary.

#### PACIFIC ASSOCIATION OF RAILWAY SURGEONS.

San Francisco, March 29, 1915.

To Members:

The Thirteenth Annual Meeting of the Pacific Association of Railway Surgeons will be held in San Francisco on Friday, June 25th, 1915.

It has been decided to dispense with the scientific program as the American Medical Association meets here during this week and undoubtedly a scientific feast will be in store for you.

A trip to Mt. Tamalpais, over its scenic railway, has been arranged for members and their families. Will leave San Francisco, via Sausalito Ferry, Friday, June 25th, at 1.45 p. m.; on arrival at the summit an excellent "California" dinner will be served at the Tavern of Tamalpais; a boat will meet the party on the return at Sausalito and land them at the Panama-Pacific Exposition grounds, a most beautiful sight, particularly approaching the Fair by water and viewing the wonderful illumination; the party will then be at freedom to enjoy the wonders of the most magnificent fair the World has ever witnessed.

We have given but one day to our meeting as many conventions are to be held in San Francisco during this week and there are a thousand and one other attractions. The following are some of the conventions which meet here:

American Medical Association.  
American Hospital Association.  
American Association of Medical Examiners.  
American College of Surgeons.  
American Therapeutic Society.  
American Proctologic Society.



American School Hygiene Association.  
American Academy of Medicine.  
Medical Society, State of California.

You cannot afford to miss the scenic trip to Mt. Tamalpais, the excellent dinner at the Tavern, or the delightful boat ride to "Jewel City," the most beautiful of all fairs. No expense to members and their families.

Very truly yours,

LOUIS P. HOWE, M.D.,  
Secretary.

#### PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

The Pacific Coast Oto-Ophthalmological Society meeting will be held in the Auditorium, San Francisco, June 15, 16 and 17, 1915.

The Plaza Hotel has set aside one hundred rooms for this meeting. The rooms must be reserved before May 15, 1915, at which date all rooms not engaged will be canceled.

Following is the provisional program:

##### Tuesday, 10 A. M.

Address of Welcome—

Harry G. Sherman, President of the California State Medical Society, San Francisco.

Address of Welcome—

Kasper Pischel, Chairman of the Eye, Ear, Nose and Throat Section of the California State Medical Society, San Francisco.

Address of Welcome—

Harrington B. Graham, Chairman of the Eye, Ear, Nose and Throat Section of the County Medical Society, San Francisco.

Address of Welcome—

Herbert C. Moffitt, President of San Francisco County Medical Society, San Francisco.

Address of the President—

Hayward G. Thomas, Oakland, Cal.

##### Tuesday 2 P. M.

1. Some Original Operations Intended to Relieve or Cure Chronic Glaucoma by Capillary Drainage; Illustrated by Stereopticon Views, Casey A. Wood, Chicago, Illinois.
2. Report of Cases Operated by the Elliott Method, Walter R. Parker, Detroit, Michigan.
3. Medical Aspect of Glaucoma, Martin Fisher, Cincinnati, Ohio.
4. Subject to be announced. Roderic O'Connor, Oakland, Cal.
5. Local Anesthesia in Surgery of the Iris and Lens, P. de O'Barrio, San Francisco, Cal.

##### Wednesday, 10 A. M.

6. Subject not announced. Edward E. Maxey, Boise, Idaho.
7. Indications for Operative Interference in Accessory Sinuses of the Nose, John J. Kyle, Los Angeles, Cal.
8. Eye and Orbital Lesions Secondary to Nasal Affections, William Ford Blake, San Francisco, Cal.
9. Subject not announced. R. W. Perry, Seattle, Wash.
10. Diphtheria Carriers, Arthur A. O'Neil, San Francisco, Cal.

##### Wednesday Afternoon.

Reserved for the Exposition. Dinner at Exposition Wednesday evening.

##### Thursday, 10 A. M.

11. Ideal Mastoid Operation, H. O. Reik, Baltimore, Maryland.
12. Subject to be announced. Harold Gifford, Omaha, Nebraska.
13. Report of a Case. Herbert Cohn, Hogan and Welty, San Francisco, Cal.
14. Tonsils and Adenoids from the Standpoint of the Pediatricist, Sanford Blum, San Francisco, Cal.
15. Subject to be announced, A. R. Irvine, Salt Lake City, Utah.

##### Thursday, 2 P. M.

16. Tuberculous Lesions of the Retina and the Retinal Vessels, Edward Jackson, Denver, Colorado.
17. Cataract Operations, Vard H. Hulén, San Francisco.
18. The Smith Operation, A. S. Green, San Francisco, Cal.
19. Pulsating Exophthalmos Treated by Slow Occlusion of the Common Carotid Artery with the Neff Clamp, Stephen D. Brazeau, Spokane, Wash.
20. Observations on the Use of the Tropometer, Joseph L. McCool, Portland, Ore.

Friday morning the following men have signified their intention of doing work at the various hospitals:

Edward Shortlidge, French Hospital; 9 a. m. Demonstration of cases and enucleation of tonsils.

Doctor A. S. Green, Polyclinic Hospital, 9 a. m., the Smith Operation.

Doctors Cohn and Moore, 10 a. m., Polyclinic Hospital, enucleation of the tonsil.

Doctor Henry Horn, Polyclinic Hospital, 11-1, Bronchoscopy and tonsil operation.

Doctor Vard H. Hulén, New City and County Hospital, 9 a. m., cataract operations.

Doctor Cullen F. Welty, New City and County Hospital, 9 a. m., radical mastoid operations.

The regular Ear, Nose and Throat Clinic at Stanford Medical College from 2 to 4 p. m., Friday. Doctor E. C. Sewell in charge.

Undoubtedly there will be more clinics held on Friday morning, but this is all that have responded up to the present time.

Very truly yours,

CULLEN F. WELTY,  
Secretary.

#### THE SOCIETY OF AMERICAN BACTERIOLOGISTS.

Glenolden, Penna., March 20, 1915.

The Council of the Society of American Bacteriologists has decided to hold a special summer meeting in San Francisco, August 3, 4 and 5, 1915. The chairman of the local committee of arrangements is Dr. Wilfred H. Manwaring, Stanford University, California.

#### THE SEVENTH PAN-AMERICAN CONGRESS.

This will meet in San Francisco, June 17th-21st inclusive. It assembles pursuant to invitation of the President of the United States issued in accordance with an act of Congress approved March 3, 1915.

The countries and colonies embraced in the Congress are the Argentine Republic, Bolivia, Brazil, Canada, Columbia, Cuba, Chile, Costa Rica, El Salvador, Ecuador, Guatemala, Honduras, Haiti, Hawaii, Mexico, Martinique, Nicaragua, Panama, Paraguay, Peru, Santo Domingo, United States, Uruguay, Venezuela, British Guiana, Dutch Guiana, French Guiana, Jamaica, Barbadoes, St. Thomas and St. Vincent. The organization of the Congress is perfected in these countries and the majority of them have signified their intention to be represented by duly accredited delegates.

The Congress will meet in seven sections, viz: (1) Medicine; (2) Surgery; (3) Obstetrics and Gynecology; (4) Anatomy, Physiology, Pathology and Bacteriology; (5) Tropical Medicine and General Sanitation; (6) Laryngology, Rhinology and Otology; (7) Medical Literature.

All members of the organized medical profession of the constituent countries are eligible and are invited to become members. The membership fee is \$5.00 and entitles the holder to a complete set of the transactions. Advance registrations are solicited and should be sent with membership fee

to the treasurer, Dr. Henry P. Newman, Timken Building, San Diego, California.

The general railroad rate of one fare for the round trip, good for three months, made on account of the Panama-Pacific Exposition at San Francisco, and the California Exposition at San Diego is available for the Pan-American Medical Congress.

The Palace Hotel will be headquarters.

The First Pan-American Medical Congress was most successfully held in the United States in 1893. Five intervening Congresses have been held in Latin American countries. It now devolves upon the medical profession of the United States to make this, the seventh, the most successful in the series.

Charles A. L. Reed, President, Union Central Building, Cincinnati.

Harry M. Sherman, Chairman Committee of Arrangements, 350 Post St., San Francisco.

Ramon Guiteras, Secretary General, 80 Madison Avenue, New York City.

Philip Mills Jones, Special Committee on Hotels, 135 Stockton St., San Francisco.

## NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

## NEVADA STATE SOCIETY MEETING.

Papers for next meeting of Nevada State Medical Association; meets June 17, 18, 19, 1915, at Reno, Nevada:

Dr. J. W. Thorne, San Francisco, Cal., Management of the Larger Joints Following Trauma.

Dr. H. H. Yerington, San Francisco, Cal., High Calory Feeding in Typhoid Fever.

Dr. A. B. Spalding, San Francisco, Cal., Immediate Perineorrhaphy.

Dr. F. S. Dolley, San Francisco, Cal., Infections of the Hand.

## STATE COMPENSATION INSURANCE FUND.

### Care of Industrial Accidents.

To the Medical Men of California.

Gentlemen:—This problem, a new one, has been met most adequately. The character of the work has been, on the whole, excellent. The fine spirit of co-operation and the general good results shown have been most gratifying to the Fund.

The Fund welcomed the agreement entered into by the State Medical Society under which any licensed practitioner of medicine and surgery might care for cases of accidental injury coming under its jurisdiction. However, the State Compensation Insurance Fund is an insurance carrier doing business in competition with other insurance carriers in this State, and as the result of this, has had to adopt a schedule of fees to cover services rendered by medical men to individuals whose employers are insured with it.

The Fund realizes that the fees in this schedule are small, and that the demands made upon physicians in many of these cases are great; but it has in the past and will in the future, by a strict interpretation of the intent of the schedule, and by a prompt settlement of accounts, make the ultimate return to the medical men commensurate with the service rendered and the financial standing of the injured individual.

The Fund deems that the friendship and co-operation of the medical men of California are valuable assets, and realizes that good, properly recompensed medical attendance on its cases will not only diminish the actual cost of medical expense, but will be an all important factor in lessening future compensation.

In this sense, then, the Fund deplors any activity that will tend to lower fees, or that will interfere with the prerogative of any regular licensed practitioner in attending individuals suffering from industrial accidents.

Yours very truly,

STATE COMPENSATION INSURANCE FUND,

By Morton R. Gibbons,  
Medical Director.

## EFFECTS OF THE HARRISON LAW.

"When the Harrison law became effective, March 1, it was widely predicted that the result would be a besieging of hospitals by crazed drug addicts, a crime wave of national scope and a trail of suicide and death across the country. A month has passed, and while the results have not been as terrible as the early hysteria painted them, have not even approximated the glaring headline predictions of the yellow press, they have nevertheless," says the Journal of the American Medical Association, "been apparent to physicians and to others who come in daily contact with drug traffic. In the Philadelphia General Hospital—and this is true of practically every hospital in the country in which drug additions are treated—the number of admissions has greatly increased. Without doubt the law has forced numerous habitues, who otherwise might have been satisfied to continue as such, to apply to physicians and institutions for treatment. Further, there is no doubt that the large majority of these unfortunates will be freed of their habit. The increased admissions to these hospitals do not represent an increase in drug additions; they are simply an objective manifestation of the operation of the Harrison law."

A communication, which the Journal publishes, from the Cook County coroner's office, presents the opposite side of the picture. It points to the suicide who anticipates his suffering as his supply of drugs ceases; it indicates the ever-hopeful victims who seek surcease of pain in deadly nostrums, and it hints at the deaths from secondary causes in weakened and collapsed bodies. It should again be emphasized that these reports are not evidence of the existence of enormous numbers of drug habitues; rather they represent the toll of a new law and the throwing of light on a hidden evil.

# DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

**Cholera Serobacterin, Mulford (Sensitized Cholera Vaccine).**—Marketed in packages of three syringes. H. K. Mulford Co., Philadelphia.

**Meningo-Serobacterin, Mulford (Sensitized Meningococcus Vaccine).**—Marketed in packages of three syringes. H. K. Mulford Co., Philadelphia.

**Typho-Serobacterin Mixed, Mulford (Sensitized Typhoid Vaccine).**—Packages of three syringes containing graduated mixtures of killed sensitized bacillus typhosus, killed sensitized bacillus paratyphosus A, and killed sensitized bacillus paratyphosus B. H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., Mar. 13, 1915, p. 909).

## Notes of Interest.

**The Franco-American Ferment Co.**—Lactobacilline preparations:

The Lactobacilline preparations now being advertised direct to the public the Council has voted that their acceptance be rescinded and that these products be omitted from New and Nonofficial Remedies. A report explaining this action has been authorized for publication.

**Liquid Paraffin (Liquid Petrolatum).**—W. A. Bastedo reports the results of a clinical investigation made under the auspices of the Therapeutic Research Committee of the Council on Pharmacy and Chemistry to determine the relative efficiency of the different preparations on the market. Three specimens were sent out: a heavy Russian liquid petrolatum, a light Russian liquid petrolatum and an American liquid petrolatum—being distinguished only by number of letter. From extended trials in hospitals it is apparent that all acted alike. Only slight differences as to palatability were noted by some (Jour. A. M. A., March 6, 1915, p. 808).

**Strychnine and Caffein as Cardiovascular Stimulants.**—J. H. Newburgh has studied the effects of strychnine and caffein in acute infectious diseases. He finds that strychnine sulphate in medicinal doses does not increase the output from the heart, slow the pulse or materially raise the blood pressure. He concludes that there is no logical basis for its use as a cardio-vascular stimulant. Further, he finds that caffein sodio-salicylate, in ordinary dosage, does not raise the blood pressure or slow the pulse. His experiments did not determine if caffein increased the blood flow (Arch. Int. Med., Mar. 15, 1915, p. 458).

**Sanmetto.**—The Council on Pharmacy and Chemistry finds that Sanmetto is a secret nostrum the exploitation of which is an invitation to haphazard, uncritical therapy and a menace to public health. It is claimed that "Sanmetto is a blending of true santal and saw palmetto with soothing demulcents in a pleasant aromatic vehicle," but neither the identity of the "demulcents" nor the quantities of the other ingredients are given. The recommendations for the use of Sanmetto are unwarranted, absurd and vicious. The advertising claims are likely to induce some physicians to belittle the importance of diseases of the sexual organs and to be content with the prescribing of

Sanmetto to the detriment of the patient and the danger of the community (Jour. A. M. A., Mar. 13, 1915, p. 926).

**Colchi-Sal.**—Colchi-Sal is sold by E. Fougere and Co., Inc., in capsules stated to contain the "active principle" of cannabis indica, colchicin, methyl salicylate and "appropriate aromatic adjuvants." It is recommended in "Gouty and Chronic Rheumatic Manifestations," "acute cases of Gout," "intestinal auto-intoxication of dyspepsia," "bilious headaches," etc. The Council on Pharmacy and Chemistry found Colchi-Sal ineligible for New and Nonofficial Remedies because the indefinite character of the "active principle" of cannabis indica made its composition secret, because it was advertised indirectly to the laity, because unwarranted therapeutic claims were made for it, because the name does not indicate the habit-forming cannabis indica and because the composition was held unscientific (Jour. A. M. A., March 20, 1915, p. 1016).

**Waterbury's Compound.**—Four years ago the Council on Pharmacy and Chemistry reported unfavorably on "Waterbury's Cod Liver Oil Compound." Having been requested to consider again the product, now known as "Waterbury's Compound," the Council found that there was no evidence that it is a substitute for cod liver oil. It held that Waterbury's Compound is advertised with misleading claims and therefore voted that no further consideration be given to it (Jour. A. M. A., Mar. 20, 1915, p. 1016).

**Neurilla.**—To show how a practically worthless mixture may be exploited by means of ill-considered testimonials, the Council on Pharmacy and Chemistry publishes a report on Neurilla, apparently the sole output of the Dad Chemical Company. Neurilla, according to the manufacturer's claims, depends for whatever virtues it has on two generally discarded drugs, skullcap and passion flower, present in unstated amounts, "aromatics" and 20.3 per cent. alcohol. It is advertised as a "nerve tonic" and is said to be "A Valuable Aid in the Treatment of Fevers, Colds, La Grippe, etc." Inquiries sent to some of the physicians whose testimonials were used to promote Neurilla brought replies indicating these testimonials to have been given thoughtlessly and on insufficient experience. In most cases the writers stated that they had abandoned the use of Neurilla long ago (Jour. A. M. A., Mar. 27, 1915, p. 1093).

## TUBERCULOSIS EXHIBIT AT EXPOSITION.

The California Association for the Study and Prevention of Tuberculosis has an interesting exhibit in the Educational Building at the San Francisco Exposition which all Californians interested in public health should not fail to visit.

The main feature of the exhibit is a large glass map which shows the deathrate from tuberculosis in the different counties and the number of beds provided in institutions for sufferers with the disease. This map is in art glass, arranged with flashes so that any one entering the booth, from any county, can see instantly the problem in their own vicinity.

There are a great many interesting charts dealing with the different phases of the problem, and there will also be some X-ray plates.

The object of the exhibit is, of course, educational; but one of the main reasons for having the exhibit is to show visitors that California has its own problem to handle, and to let them see the lack of hospital care that can be given, and to urge that they keep patients, particularly indigents, in their own States. Thirty per cent. of the deaths from tuberculosis last year in California were among native born.

The exhibit is also intended to create sentiment for Federal legislation. It will be possible to ask for Federal legislation if the subsidy bill, paying



counties three dollars a week for the care of their own cases, passes. It will be necessary to show Congress that California is willing to care for its own people, but that it is not in a position to care for outsiders any longer.

The work of the California Association is going steadily on; new dispensaries are being opened and visiting nurses are being put in the different towns.

### SCHICK REACTION.

H. N. Bundesen, Chicago (Journal A. M. A., April 10, 1915), describes Schick's test for the theory of diphtheria antitoxin in the blood, and Römer's method, which consists in the intracutaneous injection in guinea pigs of a definite minute quantity of diphtheria toxin and a definite amount of a serum to be tested for antitoxin. If no necrosis results, the toxin has been completely neutralized. For the carrying out of the Schick test, it is essential to have an accurate 1 c.c. all glass hypodermic syringe, with a scale divided into ten parts and a short, sharp, fine platinum iridium needle, sufficiently fine enough to be introduced between the layers of the skin. It should be introduced with the beveled opening or aspect of the point looking upward, and the head of the syringe lower than the point when introducing the needle into the skin. The technic is described as follows:

"The skin of the flexor surface of the forearm (upper one-third) is prepared by cleaning with tincture of green soap and 95 per cent. alcohol. With the thumb and first finger of the left hand pinch up a small portion of the skin and carefully insert the needle into, but not through the skin, so the opening in the point of the needle is covered and can be seen beneath the superficial layer of the integument. A dilution of a fresh standard diphtheria toxin is made of such a strength that 0.1 c.c. contains 1/50 of the minimum lethal dose for a 250 gm. guinea pig, and this is injected, pressure being exerted in an upward direction. If the injection has been properly given, there is to be seen at once a white bleb-like elevation which persists for several minutes and is distinctly studded with little pits corresponding to the opening of the hair follicles. The results are available at the end of twenty-four hours. If antitoxin is absent or present only in very small amounts—insufficient for protection—a positive reaction appears, which is characterized by a constantly increasing circumscribed area of redness (halo) and induration of from 10 to 25 mm. in diameter that reaches its maximum in forty-eight hours. It persists for about a week, and on fading shows a brownish pigmentation with superficial scaling and a characteristic central infiltration."

Positive reactions indicate that there is less than 1/30 unit of antitoxin in 1 c.c. of blood serum, and the person is liable to diphtheria. Faint reactions point to the presence of small amounts of antitoxin. Tabulated results of 800 cases tested at different ages are given. Bacillus carriers are usually mainly insusceptible. The Schick test gives us a means of telling who is susceptible and who should be injected in case of an epidemic. The danger of cross infection is greatly reduced, and it permits a great reduction in antitoxin bills and the relief of discomfort to the patient.

### Schick Test.

Charles Graef and George Ginsberg, New York (Journal A. M. A., April 10, 1915), describe the Schick test and its utility in diphtheria cases. It is not more difficult to make than the Pirquet test for tuberculosis, and consists in the intracutaneous injection of a prepared solution containing minute quantities of diphtheria toxin. This will produce a positive reaction in twenty-four or forty-eight hours if antitoxin is absent in the individual, or so nearly so as to be insufficient for protection. The reaction consists of redness and slight swelling,

continuing for a week or more, and leaving a brownish pigmentation and superficial scaling for some time after. In a few older children and adults, there may be a pseudoreaction even when large amounts of antitoxin are present, and this must be carefully distinguished from the true one by its earlier appearance, less sharply circumscribed form, greater infiltration, and its disappearance in twenty-four hours or two days, with absence of superficial scaling. Detailed directions for making the test are given. The author's conclusions are as follows:

- "1. The most susceptible age is between 1 and 5 years. 2. Immunity obtained by having the disease or by the use of immunizing doses of antitoxin lasts from a month to several years, varying greatly in different individuals and being very brief in children. 3. The Schick test is a helpful agent in testing the efficiency of immunization by antitoxin as well as the natural immunity existing in many persons. 4. It has helped to place on more certain grounds the assurance that bad cases of diphtheria should receive early and large doses of antitoxin by intravenous injections. Antitoxin is ten times as effective when so used, as compared with the ordinary method of administration. 5. Park has obtained results in families showing a striking similarity in reactions to the test. If the youngest child of a family has a negative reaction, all the older children are likely to be negative, and if the older children are positive, the younger ones are also. When variations are found, the younger children show the positive reaction."

### \$1,000 PRIZE.

The American Social Hygiene Association has been offered a prize of \$1,000 by the Metropolitan Life Insurance Company to be awarded to the author of the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years, approved by a committee of judges to be selected by the Association.

Competition for this prize is open to all.

The Metropolitan Life Insurance Company desires to use the winning pamphlet among its industrial policyholders.

The committee of judges will conduct the competition in accordance with the following conditions:

Contest closes July 31, 1915, at midnight; any manuscript received later will not be considered.

Manuscripts should not exceed 3,500 words and must be in English and must not have been previously published.

Manuscripts must be typewritten on one side only of plain white paper 8"x10½".

Manuscripts must be paragraphed and punctuated for submission as "copy" to printer.

Each manuscript must bear some identifying mark or pen-name, but not the name of the author.

The author's name and address, and the identifying mark or pen-name should be in a sealed envelope, accompanying the manuscript; the face of the envelope should bear the mark or pen-name only.

More than one manuscript may be submitted by the same author.

The winning manuscript, in consideration of the award of \$1,000, becomes the property of the donor of the prize, all rights therein being surrendered by the author.

The right to purchase any manuscript submitted, at the rate of 5 cents a word, is reserved by the Metropolitan Life Insurance Company and by the American Social Hygiene Association.

Any manuscript not winning the prize or purchased will be returned to the author if return postage is provided.

Address manuscripts and requests for further information to the American Social Hygiene Association, 105 West 40th Street, New York City.

**WARREN TRIENNIAL PRIZE.****Massachusetts General Hospital.**

The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation considered worthy of a premium, on some subject in Physiology, Surgery, or Pathological Anatomy; the arbitrators being the Physicians and Surgeons of the Massachusetts General Hospital.

The subject for competition for the year 1916 is on some special subject in Physiology, Surgery or Pathology.

Dissertation must be in either the English, French or German languages, and must be type-written and suitably bound, so as to be easily handled. Work that has been published previously will not be considered in competition. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation.

Any clew given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same.

The amount of the prize for the year 1916 will be \$500.

In case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations will be received until April 14, 1916.

A high value will be placed on original work.

FREDERIC A. WASHBURN,  
Resident Physician.

Boston, March, 1915.

**NEW MEMBERS.**

Craig, John B., San Bernardino.  
George, Wm. A., Loma Linda.  
Whitmer, Chas. F., Colton.  
Shryrock, Alfred, Loma Linda.  
Boller, Phil, Los Angeles.  
Larson, August H., Los Angeles.  
Morse, Jason, Tropic.  
Tredway, Edward E., Pasadena.  
Loughridge, Jas., Folsom.  
Affleck, Jas. T., Sacramento.  
Sigwart, Joseph F., Sacramento.  
Davis, Henry J., Sacramento.  
Rinker, C. L. A., Madera.  
Dowling, S. W., Idria.  
Anderson, B. C., Barstow.  
Parker, Truman A., La Jolla.  
Wilson, Henry B., San Diego.  
Wegefath, H. M., San Diego.  
Lesem, A., San Diego.  
Chappel, H. W., Palo Alto.  
Dougherty, Edwin E., Los Angeles.  
Morrow, Llewella M., Pasadena.  
Colliver, John A., Los Angeles.  
Fundenberg, Geo. B., Pasadena.  
Jacobs, Joseph, Los Angeles.  
Parrish, F. W., Dos Palos, Cal.  
Hartwell, Robt. W., Dos Palos.  
Larson, Carl Fred'k, Sanitarium, Cal.  
Alumbaugh, F. W., Calistoga.  
Jordan, Wm. F., Floriston.  
Ostrom, Earl E., Loomis.  
Kellogg, Preston S., Escondido.  
Molitor, Nicholas, San Diego.  
Adams, Chas. B., Los Angeles.

Coulter, H. McKay, Pasadena.  
Cleland, H. O., Ukiah.  
Thomas, Philip M., Elk.  
Piersol, F. C., Mendocino.  
Wolfe, Homer H., Albion.  
Fountain, E. R., Merced.  
Aller, D. I., Merced Falls, Cal.  
Derrick, Jos. S., Los Angeles.  
Swift, E. L. H., Los Angeles.  
Granger, A. S., Los Angeles.  
McNeile, Olga, Los Angeles.  
McNeile, Lyle G., Los Angeles.  
Norton, Chas. W., Los Angeles.  
Hanlon, E. R., Los Angeles.  
Loomis, Melville Le R., Los Angeles.  
Lepper, L. E., Pomona.  
Swetnam, C. R. K., Los Angeles.  
Stoughton, Arthur V., Claremont, Cal.  
Brown, Blanche C. B., Los Angeles.  
Hitt, A. W., Los Angeles.  
Titus, J. H., Ontario, Cal.  
Smith, Robt. Lee, Pomona.  
Mitchell, Lillian S., Pasadena.  
Sunde, P. H., Los Angeles.  
Dietsch, Curt O., Los Angeles.  
Kerr, A. N., Hawthorne, Cal.  
Young, Chas. S., Los Angeles.  
Jones, Ellis Wm., Los Angeles.  
Mace, Lloyd R., Hollywood.  
Hill, Robt. B., Los Angeles.  
Brownfield, Wm. H., Los Angeles.  
Reed, Wallace A., Covina, Cal.  
Old, F. J. T., Los Angeles.  
Avery, Lewis G., Los Angeles.  
Kirschner, Harry E., Monrovia, Cal.  
Holladay, F. S., Los Angeles.  
Gallagher, Hiram M., Los Angeles.  
Hanford, Frank W., Los Angeles.  
Crossan, John W., Los Angeles.  
Gilbert, Wm. H., Los Angeles.  
Dietrich, Henry, Los Angeles.  
Traber, C. H., Reedley.  
Lewis, Elizabeth G., San Jose.  
Petch, T. R., Eureka.  
Rockwell, Orville, Fortuna.  
Flores, O. P., Blue Lake.  
Sproat, S. McCoy, Portola, Cal.  
Webster, Donald P., Westwood.  
White, Geo. S., Los Angeles.  
Breneman, Joseph T., Rust, Cal.  
Diggins, Edw. A., Antioch, Cal.  
Anderson, Axel E., Fresno.  
Benedict, Wm. L., Fresno.  
Chadwick, Benj. C., Fresno.  
Graham, Lyle, Del Rey, Cal.  
Motheral, Raphael, Hanford.  
Schottstaedt, Wilhelm E. R., Fresno.  
Adams, Jno. E., Oakland.  
Grissim, John De L., Oakland.  
Moore, Gertrude, Oakland.  
O'Connor, Roderic P., Oakland.  
Medros, J. J., Hayward.  
Long, Geo. L., Fresno.  
McKenny, Jas. A., Parlier.  
Beard, John L., Healdsburg.  
Thompson, Lewis L., Gridley.

**RESIGNED.**

D'Ancona, A. A., San Francisco.  
Tebbetts, Jas. Henry, Hollister.

**DEATHS (APRIL).**

Hart, Henry Hersch, San Francisco.  
Nichols, Henry Lombard, Sacramento, Cal.  
Munson, Mary F. (died in Toledo, Ohio).  
Upton, Hugh, Upper Lake, Cal.  
Burton, B. T., San Francisco.  
Farrar, Joseph Teel, Berkeley.  
Brown, Jas. W., Grass Valley.  
Farnum, Chas. E., San Francisco.  
Clark, Chas. F., Woodland.